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AUTHOR McAdams, John A.; Taylor, Beverly Loy
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ABSTRACT

No educational program, however well designed, will be successful unless it is effectively implemented. This is just as true of "traditional" programs as of innovative or changed programs that are newly introduced in a school system. Very often, what a school system should undertake is improving the implementation of traditional programs rather than introducing new programs. The same is true of a change program that has been underway for a reasonable period; often the need is to make its implementation more effective. A person who completes this unit should be able to identify and list the essential feature of a local educational program from a written or oral description of it, design a plan for assessing the implementation of the features of an educational program, design a plan for conducting a casual analysis of shortcomings in the implementation of an educational program, design a plan for identifying and evaluating resources likely to overcome the shortcomings identified, and design a plan for improving the implementation of an educational program. (Author/IRT)

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TRAINING FOR LEADERSHIP IN LOCAL EDUCATIONAL IMPROVEMENT PROGRAMS

UNIT 9. ANALYZING AND IMPROVING THE IMPLEMENTATION OF A LOCAL EDUCATIONAL PROGRAM

Unit Co-authors

John A. McAdams
Beverly Loy Taylor

Project Director

Glen Heathers

Research for Better Schools
1700 Market Street
Philadelphia, Pennsylvania

Robert G. Scanlon
Executive Director

1975

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PREFACE

This is one of 10 units in a program of Training for Leadership in Local Educational Improvement Programs. Development of the program was begun at the Learning Research and Development Center at the University of Pittsburgh and has been carried forward at Research for Better Schools in Philadelphia.

If you have in hand the Instructor's Guide to the program, or Unit 1 entitled Training Program Introduction and General Study Plan Guide, you will have sufficient introduction to the nature and purposes of the training program. If you do not have access to one or both of these items, the following paragraphs will introduce you to this unit of the program.

This unit was designed for use by anyone holding a position calling for leadership in planning and conducting local educational change programs. This means school district leaders - central office administrators, building principals, curriculum specialists, or teachers involved in change project teams. Also it means graduate students in curriculum, administration, or supervision. In addition, curriculum specialists or field personnel of state education departments or other educational agencies may find the unit of value in their work with school districts - as in the conduct of workshops involving local school personnel.

The unit can be studied on a wholly self-instructional basis, or with an instructor's direction. It requires one or two days of study time.

The unit's topic - improving the implementation of a local educational program - is clearly an important one. A program cannot deliver its potential benefits unless it is effectively implemented, and studies have shown that ineffective implementation of local programs is a common occurrence.

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UNIT 9. ANALYZING AND IMPROVING THE IMPLEMENTATION OF A LOCAL EDUCATIONAL PROGRAM

Introduction

No educational program, nowever well designed, will be successful unless it is effectively implemented. This is just as true of "traditional" programs as of innovative or change programs that are newly introduced in a school system. Very often, what a school system should undertake is improving the implementation of traditional programs rather than introducing new programs. The same is true of a change program that has been underway for a reasonable period; often the need is to make its implementation more effective.

Studies of the degree of implementation of change programs have revealed that a high proportion of such programs never is fully implemented. This has been found, for example, with change programs introducing nongraded organizational plans, cooperative teaching, departmentalization in the elementary school, and innovative curricula in elementary and secondary schools.

Often a program is implemented well in its formal aspects (materials, equipment, staff assignments, etc.) but not in the conduct of instruction or other procedures it calls for. Thus, ability grouping usually is well implemented in the assignment of students to groups since this requires only administrative arrangements. However, studies have found that many teachers do not modify their instructional approaches to suit differences between high and low groups. Innovative curricula adopted by a school system very often are poorly implemented because teachers teach them using traditional instructional approaches instead of the new approaches required.

Improving the implementation of programs that already are in operation is a vital function of specialists in educational change. Until it achieves effective implementation of a program, a school district cannot reap the

benefits that the program was designed to yield. Also, no fair judgment can be made about the potential benefits of a program whose key features have not been placed effectively in operation.

The term "local educational program" as used in this unit requires definition. The term is used here to refer to a school's instructional program or any major segment of it. Thus, the self-contained classroom and team teaching represent general organizational arrangements for instruction, while the use of the Sullivan Basic Reading Laboratory (BRL) materials illustrates a part of the instructional program in one curriculum area. The term also refers to any planned provisions for interpersonal or intergroup relations at school or for school-community relations. In addition, it refers to any aspect of staffing, administration or supervision, and staff training.

Unit Objectives

In this unit you will study how to identify key features of a local educational program and how to assess present levels of implementation of those features. You will learn how to probe for causes of faulty implementation and practice the leadership function of designing plans to improve the program's implementation.

Upon completing this unit, you should be able to:

1. Identify and list the essential features of a local educational program from a written or oral description of it.
2. Design a plan for assessing the implementation of the features of an educational program.
3. Design a plan for conducting a causal analysis of shortcomings in the implementation of an educational program.
4. Design a plan for identifying and evaluating resources likely to overcome the shortcomings identified.
5. Design a plan for improving the implementation of an educational program.

Who Can Benefit from Studying This Unit?

This unit is meant especially for school system leaders who have responsibilities in planning and implementing local educational programs, particularly associate or assistant superintendents, curriculum coordinators, building principals, and members of project teams. The unit should be valuable both for incumbents in these roles and for those preparing for such roles. In addition, the unit should be useful to consultants from state education departments, educational consulting firms, and universities who frequently are called upon by school systems to help them improve their capabilities and performance.

Unit Study Plan

In approaching this unit your first task is to decide how intensively you want or need to study each objective. Then you will need to plan how to go about it. Here is a guide for doing so, either with help from your instructor (if you have one) or on your own. The procedure you are to follow is in four steps: assessing your needs to study the unit, deciding on your way of studying it, assessing your mastery of the unit objectives after study, and filling out your evaluation of the unit.

1. Personal assessment of needs to study the unit. In this step, you first should leaf quickly through the unit to familiarize yourself with the objectives and their content. Do this in a cursory fashion; it serves only to set your mind in relation to the unit. Fifteen minutes should be enough time for skimming over the unit contents.

Next, complete the Pre-Assessment Exercise (pages 5-7) as a basis for estimating your present degree of mastery of unit objectives. The exercise calls upon you to think through each of a series of steps in arriving at a plan to remedy shortcomings in implementation and to write down your illustrative answer for each step. You should not take more than 20-30 minutes to do the Pre-Assessment Exercise.

When you complete the exercise, you should turn to page 8 for directions on checking your answers with use of the Pre-Assessment Exercise Answer Key.

PRE-ASSESSMENT EXERCISE - UNIT 9

Planning to Remedy Shortcomings in a Program's Implementation

Directions: This exercise offers you a way of checking how well prepared you are to perform the steps in planning a remedy for shortcomings in the implementation of a local educational program. This exercise should take no more than one-half hour. Ohen you complete the exercise, compare your answers to those given in the Answer Key as explained on page 8.

---

1. From the following description, write down a list of the features of the MIGS program to be implemented in the Franklin Intermediate School.

   Methods of Inquiry in General Science (MIGS) is a new commercial science course for intermediate schools. The two-semester course contains 100 separate project units, each consisting of a study guide, a set of reading booklets, and a list of materials, equipment, etc. to be provided by the school. There are 20 projects each in mechanics, electricity, chemistry, plants, and animals. Each student receives a copy of the Inquiry Methods Handbook as a guide in planning projects and preparing project reports. The science lab is to be divided into 5 learning stations, one for each of the project areas, and a library center housing reading materials. Each learning station is to be equipped with what is required to perform the projects in its area and is to provide work space for 10 students, while the library center is to provide study space for 15 students. (These figures assume a class of 40 students or less.)

   During each semester, each student is required to do one project in each area, two or three independently, and the others with a fellow student. Each student can do as many additional projects as time permits. The student elects each project with the instructor's approval. Not more than one student or student pair can work on a given project at a given time. The instructor assists students individually or in pairs. Students present oral or written reports on all of their projects as the instructor's main basis for evaluating their work. Both instructor and student keep an up-to-date record of projects performed and their level of accomplishment.

   List of program features (Be brief. You may or may not need all the numbers.)

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____
   6. _____
   7. _____
   8. _____
   9. _____
   10. _____
   11. _____
   12. _____
   13. _____

2. How would you obtain data on whether the Franklin I.S. chose to modify its version of MIGS in any way from what has been described?

3. Assume 3 science teachers each has four classes in MIGS. What plan would you use to assess how well the following procedures were employed in the 12 classes? (Assume that you gather your data just after a semester has ended.)

   a. Students elect projects in conference with the instructor.

   b. Each student does projects in each area each semester, two or three individually and the others with another student.

4. List aspects of the classroom setup for MIGS where it is likely that shortcomings of implementation will be found.

5. Assume that Teacher A made extensive use of whole-class lectures and discussions rather than teaching MIGS on an individual basis. What are a number of likely causes of this faulty implementation and how would you get data on them?

6. Assume you found that one major cause of Teacher A's failure to follow the required procedure was a lack of understanding of how to individualize instruction. What are types of sources you would turn to in seeking information on ways of overcoming this failure?

7. Outline a plan for remedying the shortcoming in Teacher A's instruction and state reasons for your choice.

(Continue on back if you need more space.)

Now that you have completed the Pre-Assessment Exercise, you (and your instructor, if you have one) should compare your answers with those given in the Pre-Assessment Exercise Answer Key (end of unit). Compare the quality and detail of your answers with those in the Answer Key. There is no one right answer to any of the questions. Also, the Answer Key gives fuller answers to some of the seven parts of the Exercise than you would be expected to give.

In the table below, check the estimates you make of your degree of mastery of each part of the Pre-Assessment Exercise. Check HIGH if you judge your answer to be right on target and in adequate detail. Check MODERATE if you judge your answer to be good but lacking some points needed for a fully adequate answer. Check LOW if you find your answer to be inappropriate or very incomplete.

Item #	Stage in Planning Process	Level of Mastery Shown		
		High	Moderate	Low
1.	Listing key features of the MIGS program	____	____	____
2.	Finding whether Franklin I.S. made changes	____	____	____
3.	Plans for assessing program implementation	____	____	____
4.	Listing likely shortcomings of implementation	____	____	____
5.	Listing likely causes of faulty implementation	____	____	____
6.	Finding likely ways to overcome shortcomings	____	____	____
7.	Outlining a plan chosen to remedy shortcomings	____	____	____

Now, in the table below listing the objectives of Unit 9, indicate for each whether you judge that you need only to study it for review purposes or to study it carefully. The item numbers in the Pre-Assessment Exercise related to each unit objective are indicated.

Unit Objective	Review only	Study carefully
1. Identify and list essential features of a local educational improvement program (Items 1,2)	____	____
2. Design a plan for assessing implementation of a program's features (Items 3,4)	____	____
3. Design a way of conducting a causal analysis of shortcomings in program implementation (Item 5)	____	____
4. Survey likely ways of overcoming shortcomings in implementation (Item 6)	____	____
5. Design a plan to improve program implementation	____	____

2. Study procedure. To study the unit, keep in mind that you will gain by doing the objectives in the order in which they appear since each section of the unit assumes a certain level of understanding based on the previous one. Some parts, according to your mastery estimates, will require your careful study while others will need only to be reviewed.

You may wish to study all or part of this unit with one or more other students. Also, your instructor may elect to conduct group sessions. And, of course, you could study the unit entirely independently.

Probably you will need one or two days to study this unit, depending on how intensively you wish to study any or all of the objectives. It is best to proceed through the unit as it is presented and then to make plans for later, more detailed study of those areas of particular interest to you.

(When you complete study of the unit, you will find directions for the Post-Assessment Exercise and the Unit Evaluation.)

Objective 1. Identify and list the essential features of a local educational program from a written or oral description of it.

In setting about to improve the implementation of any program or program element of a school system, the first task is to make a careful assessment of present shortcomings of implementation. This divides into two sub-tasks: specifying the essential features of the program that need to be implemented and assessing the extent to which each of those features has been implemented. Objective 1 focuses on the task of arriving at an accurate list of program features.

The essential features of a program are those features that must be fully implemented in order for the program to be operating effectively. They are required rather than optional. They are elements in the blueprint of the program. They include the "what" of the program (materials, equipment, arrangements, etc.) and the "how" (procedures to be followed). They are the things one would need to examine in determining whether or not the program had been implemented fully.

Your leadership in arriving at a full and accurate list of essential program features is necessary, whether you are the program's director, a school system official with the responsibility of monitoring the program, or an outside consultant assigned the job of helping improve the program's implementation. Whatever your role, the task is the same, though the circumstances of your involvement will differ with the role you are filling. The following deals with the process of obtaining a list of program features without regard to the particular role you are filling.

A very frequent situation is when a school system has adopted a program developed outside the system. In such a case, it almost always is true that the program's developers provide written materials giving a description of the program's features. Developing a list of these features then is simply a matter

of abstracting them from the description.

Frequently a school system adopts some program developed elsewhere and, in adapting it to the local situation, makes certain changes in the program. In this case, identifying program features calls for preparing a list from descriptions given by the originators of the program, then modifying that list from written or oral reports specifying the changes made by the school system.

Many times school systems build their own programs, ordinarily selecting some features from programs developed elsewhere, and adding some features of their own, thus arriving at a program designed to fit the needs and characteristics of the system. Developing an accurate list of features of such a program can be difficult since it is not uncommon for a school system to have no formal written description of the program it created. Also it is not uncommon for changes to be made from the initial written description of a program without their being written down in a revision of the initial description. In this case, it is necessary to interview those responsible for the program to learn just what changes have been made.

To give you practice in listing program features, Exercise 1 calls upon you to identify and write down the essential features of a local educational program. The rule to follow in preparing your list is to identify every aspect of the program that you would expect to find in a school that implemented it.

Exercise 1

In this exercise, you are asked to prepare a list of features of a local improvement program from a written description of it and to indicate where in that description each feature is stated. The program described is that for an intermediate school in a large metropolitan school district.

Use the Exercise 1 - Worksheet (page 16) in listing program features. When you locate one, make an abbreviated statement of it on the worksheet and indicate the paragraph(s) where it was stated. Here is an example of the sort of entry you should make.

FEATURE (A,B,etc.)	DESCRIPTION OF FEATURE	PARAGRAPH REFERENCE
A.	Use with grades 5-8 or 6-8	2

(When you complete the exercise, check your entries with the Exercise 1 - Answer Key on page 17.)

The Wildwood Intermediate School Program (WISP) in a Metropolitan District

Paragraph

1 Considering the emphases and directions to be sought in the intermediate years of a child's education, WISP provides a new school organization for use in achieving basic changes in curriculum, methodology, and guidance so that a more effective program of education can result.

2 Although the direction is toward a four-year form of organization, some pilot schools will be made up of grades 6-7-8. Priority will be given to establishing 5-6-7-8 schools where such organization provides space in elementary schools for the expansion of the early childhood programs.

3 WISP will offer enough variety and depth of instructional material for most children to require four full years of attendance. Individual programming, however, will permit children to progress at different rates in their various subjects. Subject acceleration, resulting in advanced placement, will be emphasized. Thus, some children will be able to complete the regular sequence in three years, while other children will require five years. However, fifteen-year olds, regardless of achievement levels, should be transferred to high school.

4 Small schools-within-schools, each representing a cross section of the total school population, are to be set up. For example, in a school accommodating 1800 pupils, three sub-schools of approximately 600 pupils will be organized. The 600 pupils who belong to any one sub-school will be in grades 5-8 and will represent the entire gamut of age, ability and talent. These 600 pupils will be divided further into four blocks of about 150 pupils.

WISP will program pupils for subjects such as art, music, health education and industrial arts on a total-school basis, drawing students from each sub-school. Common facilities, such as auditoriums, gymnasiums, and music rooms, will be used jointly, providing opportunities for pupils to mingle with those form the other sub-schools in the building. In addition, it is recommended that pupils leave the sub-school for clinical help in reading, speech improvement, and other special services.

For work in other areas (reading, spelling, writing, mathematics, social studies, etc.), pupils will be programmed for large- or small-group work in each sub-school or for working alone on activities suited to individual needs. WISP also programs each student for time in which to pursue individual interests. In order to meet individual needs, it is recommended that the conventional method of estimating the time needed by pupils to learn a given unit of work be changed.

Basic to the WISP design is the diagnosis of pupils' needs and the individualization of instruction. To accomplish this, a team approach is required, calling for teachers, counselors, and other specialists to work with administrators and supervisors in planning for the total educational growth of individual pupils for the duration of their stay in WISP. Each team will be assigned a block of approximately 150 pupils and will be responsible for the progress of this group. In general, students will stay with the assigned team, although changes may be made if desirable.

The classroom teachers will be the school's basic guidance workers because they will have the closest and most continuing relationship with
8 the pupils in their assigned group. Time blocks in the school day will enable teachers to confer with children, parents, and other staff members; to study records; and to plan ways for meeting their students' needs.

Based on a Pre-Kindergarten-Grade 12 sequence, the curriculum will include the commonly-accepted subject areas: language arts, mathematics,
9 science, social sciences, foreign languages, physical education, and the arts. In addition, typewriting will be taught in the fifth grade or as early as is practicable. Foreign languages will be introduced to all children at the fifth grade level.

The complexity of the WISP organization, with individual scheduling and flexible programs, will necessitate extensive supervision. Each
10 school should have a principal, vice principal, assistants to the principal (one for each sub-school), and chairpersons in selected subject areas.

The maximum use of non-professional personnel (school aides,
11 lunchroom workers, etc.) should be devoted to freeing the professional staff so that it can spend all of its time on professional activities.

EXERCISE 1 - WORKSHEET

Listing Features of a Local Educational Program

Directions: Write down a list of the essential features of the Wildwood Intermediate School Program from the written description given. Make your descriptions of program features as brief as you can without losing any key points. Be sure to give paragraph references.

FEATURE A,B,etc.	DESCRIPTION OF FEATURE	PARAGRAPH REFERENCE

EXERCISE 1 - ANSWER KEY

Listing Features of a Local Educational Program

FEATURE A,B,etc.	DESCRIPTION OF FEATURE	PARAGRAPH REFERENCE
A.	Use with grades 5-8 or 6-8	2
B.	The student proceeds at his own pace through the program.	3
C.	Fifteen-year-olds go on to high school, regardless of level of achievement reached.	3
D.	The total school population is broken into separate schools-within-a-school (the house plan).	4
E.	Each sub-school has four age units of an approximately equal number of students.	4
F.	Music, art, health, industrial arts, and special education draw students from all sub-schools.	5
G.	Both large- and small-group instruction occurs in all regular subject-matter areas.	6
H.	Provisions for independent study are built into the program.	6
I.	A flexible time schedule is provided for work in any curriculum area.	6
J.	A staff team of teachers, counselor, other specialists and administrators is assigned to a team of 150 students.	7
K.	Teacher planning and conference time is scheduled.	8
L.	The curriculum is sequential and includes the regular subject areas.	9
M.	Typing and foreign language are introduced in the fifth grade.	9
N.	Each school has a principal, vice principal, assistant to the principal, and chairmen of subject areas.	10
O.	Paraprofessionals are employed.	11

In listing program features, it is important to be sure that you have included both "structural" and "procedural" features. In any program, the structural features are those elements that form the framework of the program, and any materials or equipment included in it. Thus, when a new curriculum is adopted, its structural elements consist of texts or other sorts of learning materials, instructors' guides, equipment to be used, classroom arrangements for instruction, assignment of staff for teaching the program, and grouping and scheduling students for instruction. All of these features can be purchased or arranged by those responsible for installing the curriculum.

The procedural features of a program refer to things that staff members, students, or others are to do in conducting the program. Thus, a new curriculum may call upon teachers to plan students' work on an individual basis, to have students conduct their study in terms of individual projects, and to require students to demonstrate mastery of their learning tasks. These procedures are as much a part of the program as its structural elements. Usually they are the critical elements in implementing a program and it usually is here that faulty implementation occurs.

Example of faulty implementation of procedural features within the structure of nongraded programs have been reported by Goodlad and Anderson. They found in a survey of nongraded schools across the country that many of the elementary schools studied had set up groups on a non-grade-level basis but failed to teach in ways that enabled students to advance at different rates without regard to the usual grade-level curriculum. Within a nongraded structure, the teachers were teaching and advancing students according to the traditional grade system. (Goodlad, John I., and Robert H. Anderson. "Educational Practices in Nongraded Schools: A Survey of Perceptions."

Elementary School Journal, 1962, 43, 33-44.)

To help you clarify the distinction between structural and procedural features of a program, Exercise 2 follows.

Exercise 2.

In this exercise, your task is to examine the list of features of the Wildwood Intermediate School Program as given on the Exercise 1 - Answer Key. On the Exercise 2 - Worksheet, opposite each feature listed check whether, in your judgment, it refers to a program element that can be installed merely by administrative decisions or whether it calls for staff members to do certain things within the structure provided. (Don't be surprised if the majority of your check marks are in one column.)

When you complete the exercise, turn to the Exercise 2 Answer Key (page 21) and compare your answers with those given.

EXERCISE 2 - WORKSHEET

Identifying Structural and Procedural Features of a Program

Directions: Essential features of WISP are listed below. Check opposite each to indicate whether, in your judgment, the statement is of a structural or procedural feature of the program.

	FEATURE	STRUCTURAL	PROCEDURAL
A.	Use the program with grades 5-8 or 6-8	____	____
B.	Students proceed at their own pace through the program	____	____
C.	15-year-olds go to high school, regardless of level of achievement reached	____	____
D.	Total school population is broken into separate schools-within-school	____	____
E.	Each sub-school has four age units of an approximately equal number of students	____	____
F.	Music, art, health, industrial arts, and special education draw from all sub-schools	____	____
G.	Both large- and small-group instruction occur in all regular subject areas	____	____
H.	Provisions for independent study are built into the program	____	____
I.	A flexible time schedule is provided for work in any curriculum area	____	____
J.	A staff team of teachers, counselors, other specialists and administrators is assigned to a block of 150 students	____	____
K.	Teacher planning and conference time is scheduled	____	____
L.	Curriculum is sequential and includes regular subject areas	____	____
M.	Typing and foreign language are introduced in the fifth grade	____	____
N.	Each school has a principal, vice principal, assistant to principal and chairpersons of subject areas	____	____
O.	Paraprofessionals are employed	____	____

EXERCISE 2 - ANSWER KEY

Identifying Structural and Procedural Features of a Program

In this answer key, the check marks distinguish structural and procedural program elements by assigning as structural those elements that involve primarily administrative actions and by assigning as procedural those elements that specify what needs to be done within the program's structure.

	FEATURE	STRUCTURAL	PROCEDURAL
A.	Use the program with grades 5-8 or 6-8	✓	
B.	Students proceed at their own pace through the program		✓
C.	15-year-olds go to high school, regardless of level of achievement reached		✓
D.	Total school population is broken into separate schools-within-school	✓	
E.	Each sub-school has four age units of an approximately equal number of students	✓	
F.	Music, art, health, industrial arts, and special education draw from all sub-schools		✓
G.	Both large- and small-group instruction occur in all regular subject areas		✓
H.	Provisions for independent study are built into the program	✓	
I.	A flexible time schedule is provided for work in any curriculum area	✓	
J.	A staff team of teachers, counselors, other specialists and administrators is assigned to a block of 150 students	✓	
K.	Teacher planning and conference time is scheduled	✓	
L.	Curriculum is sequential and includes regular subject areas	✓	
M.	Typing and foreign language are introduced in the fifth grade		✓
N.	Each school has a principal, vice principal, assistant to principal and chairpersons of subject areas	✓	
O.	Paraprofessionals are employed	✓	

It often happens that a school system leader or external consultant needs to develop a list of features of an ongoing school system program without prior acquaintance with that program. Starting from scratch, how should one proceed? The following procedure is offered as one way of getting the needed information.

1. Contact local personnel to determine who is responsible for the program and where information about it can be found.

2. Obtain written materials describing the program, if they exist. If the program was developed outside the school system, it is likely that there are detailed descriptions of its features available in writing. If it was created within the school system, there may or may not be a written description available. For example, if the elementary reading program is the area of concern, it is apt to be true that it has evolved over the years with changes in materials and procedures that have never been formally described in writing. Assuming some written description of the program is available, a first step is to prepare a trial list of program features from the description.

3. Interview program participants - supervisors, teachers, or others - to develop an initial list of program features if no written description is available, or to round out your initial list derived from a written description. In conducting these interviews, it is especially important to probe for procedural features of the program that specify what staff members are to do in conducting the program. An example of this task can be found in the description of the Wildwood Intermediate School Program used in Exercises 1 and 2. If you turn to the Exercise 2 Answer Key, you will note that some of the structural features imply instructional procedures that are not spelled out. For instance, Feature 0 states that "paraprofessionals are employed"

but says nothing about what they are to do. Do they prepare learning materials? Check students' work? Keep records? Etc. One of the procedural features on the WISP list (Feature B) says that students proceed at their own pace through the program without indicating how this is to be implemented. How are teachers to determine where individual students are in the learning sequence? How are they to plan individual lessons for them? How are they to arrange for them to complete lessons at different rates, and to permit them to move on to the next task without waiting for other students to catch up? Procedural features such as these need to be included in the list of essential features of a program.

4. Edit your initial list of program features to satisfy the following criteria:

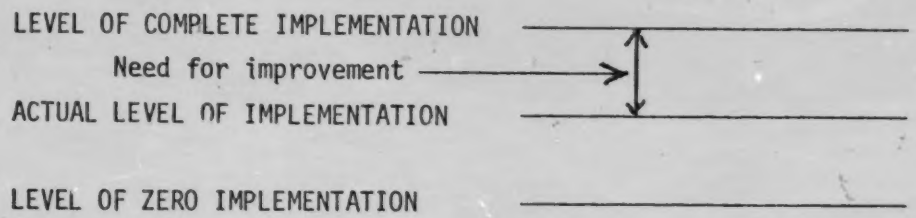
> All features on the list should be essential elements of the program that must be implemented for the program to be in full operation.
>
> The list should include both structural and procedural features.
>
> Statements of the features must be expressed in a way that indicates what sort of evidence is needed to determine their implementation.

5. Check your edited list by re-interviewing the program supervisor and participants to make sure that no essential elements have been left out.

Your final list must include a full set of program features since it provides the needed basis for all of the succeeding steps in improving the program's implementation. Thus, in the case of the list of WISP features, several would need to be added to specify procedural aspects of the program not included in the written description of that program.

Objective 2. Design a plan for assessing the implementation of the features of an educational program.

Assume that an accurate list of the essential features of a program has been made. The task now becomes one of preparing a plan for assessing the extent to which each of these features is in operation in the schools conducting the program. The purpose of this assessment is to determine which features are not well implemented. A discrepancy between the feature as specified in the program design and that feature as implemented identifies a need for improving the program's implementation. The diagram below represents the difference that may be found between the full implementation of a feature that is intended in the program's design and the actual level of its implementation.



In most cases, the assessment plan should be selective or diagnostic, rather than exhaustive, because its purpose is to identify major shortcomings in the implementation of program features. Highly sophisticated assessment methods, lengthy examination of the operations of a program, or a study of implementation in every classroom where the program is being conducted, usually are not feasible.

You would need to do several things in designing a plan to assess a program's implementation. One is that you choose appropriate methods for obtaining implementation data on each of the program's features. Another is that you examine the resources available for conducting the assessment--time, funds, expertise in assessment methods, assistance from school district personnel, etc. Yet another is to determine the scope and duration of the assessment effort--how many schools or classes can be involved in the assessment and over what period of time is it to be conducted?

Objective 2 will help you deal with these concerns. It is organized into two steps:

Identifying methods for obtaining data on the implementation of program features.

Setting up a plan for assessing the implementation of program features.

Several examples and exercises are included to provide you with models for consideration and practice opportunities.

Identifying Methods for Obtaining Data on the Implementation of Program Features

Five general methods for obtaining data on the implementation of program features are available to you: (A) interview, (B) questionnaire or inventory, (C) analysis of diary or journal entries, (D) analysis of records or reports, and (E) observation. It is not a purpose of this unit to teach basic skills in the use of these methods; that work requires a longer time and should be met by course work in evaluation methods. It suffices in this unit to examine the value and limitations of each method for obtaining data on different types of features of local educational programs.

A. Interview. Interviewing key school district personnel who are associated with the program to be studied is a first step in obtaining data about the implementation of the program. The local program administrator or

coordinator can give you basic data about the origin, design, and scope of the program. Often you can use interviewing to ascertain the implementation of general structural features of a program. In addition, interviews with the building principals or with teachers may yield at least preliminary evidence on the level of implementation of the procedural elements of a program.

Generally, though, interviewing is insufficient because those conducting a program, even classroom teachers, are apt not to have accurate information on how fully the specific procedures of a program are being carried out. Teachers may be too close to have an overall program picture, while coordinators or administrators, having the broad perspective, may lack familiarity with classroom occurrances. Also, participants in a program tend to give a more favorable picture of program implementation than is justified. One way of correcting for such inaccuracies in the interview approach is to request specific data on what happened today or during the past few days on the assumption that this will tend to yield more objective data than a more general inquiry. Another corrective is to ask a teacher to report what occurred with a particular child and to exhibit the child's work or records of work at the same time.

An obvious advantage of the interview approach is that it is not limited to the immediate present--as is observation. Also, when the program investigated is not focused in instruction, it will often be necessary to rely mainly on interviews because there is less to observe directly. This is true, for example, of educational programs in school-community relations where opportunities to observe program features in action may be quite limited.

B. Questionnaire. A substitute for, or supplement to, the interview approach is the use of questionnaires or inventories calling for written responses to items or questions. The questionnaire approach does not require

one to be present and so can be administered to any number of people simultaneously. Thus, this method might be used to obtain data from every teacher in a program or from parents in the community. Also, respondents can fill it out at their convenience. With this approach, it is possible to obtain at least preliminary data on the implementation of any feature of a change program.

However, the same limitations that apply to interviewing apply more strongly to the questionnaire approach. There is the danger that answers to questionnaire items, whether the respondent checks an alternative or writes in an answer, will be inaccurate due either to lack of specific knowledge or a tendency to present a favorable picture of the program. In addition, there may be a low rate of response or slowness in responding. Finally, no visual cues are present to aid the administrator of the questionnaire in determining the validity of the responses.

C. Diary or journal. Another method for obtaining data from others is to induce them to keep a diary or journal in which they record, daily or weekly, the occurrence of activities within a program. If participants in a program are willing to subject themselves to the discipline of keeping an accurate journal of activities, this can provide valuable data on the implementation of program features.

It is difficult to persuade busy participants to keep a regular journal on specific activities they or their students perform, since it represents one more, possibly annoying, task to carry out. Even when they do keep such a record, it usually needs to be followed up or supplemented by data obtained by other methods because the tendency is to make journal entries brief and cryptic rather than explicit.

D. Analysis of records or reports. For obtaining data on some program features, routine records of a school system may prove to be valuable. Class rosters can provide data on the characteristics of students making up class groups: age, sex, grade level, reading level. Teachers' manuals indicate what the teacher is expected to do in the classroom. Reports from when the program was put into operation can offer insight into what was considered important at that time and shed light upon probable causes of difficulty being experienced now. Sometimes it is necessary to combine data stored in different places, e.g., information from class rosters can supplement data from individual student folders to provide a fuller picture of the population participating in the program.

In cases where studies have been conducted of the implementation of a program, reports of such efforts can provide a valuable shortcut to some aspects of assessing the implementation of a program. Always, however, there is the danger that the study was inadequate or the report inaccurate. Generally, any findings of such studies should be checked against data freshly obtained.

E. Observation. For numerous features of a local educational program, on-the-spot observation is the critical method for obtaining data on levels of implementation. This is particularly true for assessing the implementation of the procedures that staff members and students, or others, are to follow in operationalizing the program.

Observation has the advantage of providing firsthand evidence, since you can observe events as they occur without relying on the report of an intermediary. But, several hazards limit the value of observational data. One concerns the correctness of the categories of behavior observed: Have the features of the program been reflected clearly in decisions as to what types of

observational data to seek? A second hazard deals with the appropriateness of the units of observation and whether they are measures of specific acts or ratings of events that occurred. Another problem concerns the question of sampling. How can one be sure that, with limited personnel and time, the best set of observations to be made has been determined (involving class and teacher differences, time of day, etc.)? A fourth hazard concerns data analysis and interpretation. Not only should methods of analyzing data be carefully chosen, but the evaluator must carefully guard against being overly optimistic or pessimistic in interpreting data obtained by observation.

In summary, consider the following:

1) Choosing the data-gathering methods to use in determining the degree of implementation of features of a local educational program is a vital part of the strategy for assessing program implementation. Generally speaking, for any given program feature, one of the five methods outlined should be chosen as the anchor method for the accuracy and completeness of the data it can provide.

2) Interviews, perhaps supported by questionnaire or diary records, have their special functions in obtaining data on program implementation. The interview normally is the anchor method in obtaining orientation data about a local educational program, on the implementation of structural features of the program, and clarifying data obtained by other means. Where information from many people is needed, the questionnaire approach often must be used because of lack of resources for conducting interviews with everyone involved in the program being studied.

3) When applicable and feasible, observation should be relied upon as the anchor method for determing the actual implementation of program features. Observation--seeing and hearing--can offer the most direct and incontrovertible evidence of implementation. Closely related to observation is the analysis of

school records. Schedules, class rosters, reports, test data, and student folders are valuable sources, although they frequently are incomplete, inaccurate, or both.

Exercise 3

To give you practice in choosing data-gathering methods, this exercise presents you with a list of the features of the Achievement Competence Training (ACT) program and asks you to identify methods appropriate for obtaining data on each feature.

Before doing the exercise on the Worksheet, read the brief description of the program. Then turn to the Exercise 3 - Worksheet where you will find the ACT features listed. For each feature, check those of the five methods that would give you valuable data on that feature. Then, for the same feature, circle the check mark for the method that, in your judgment, can provide the most reliable and complete information on implementation of the feature. Do not hesitate to give your opinion in cases where you are uncertain as to which methods to check and/or which check mark to circle.

When you have completed the Worksheet, turn to the Exercise 3 - Answer Key on page 34 and compare your marks with those given there. Remember, the purpose of this exercise is simply to offer practice in identifying appropriate data-gathering methods. There are no official right or wrong answers.

The Achievement Competence Training (ACT) Program

Achievement Competence Training (ACT) is a program intended to assist learners in becoming self-directed. By treating children as active agents in their own development, ACT aims to promote a vital sense of internal control and self-esteem which is closely related to effective learning. ACT seeks to teach precise goal-setting and planning skills which research has linked with achievement behavior; ACT structures experiences to aid children in using those skills autonomously. Students are encouraged to transfer ACT skills to all other school activities and to activities outside school.

The ACT program is designed for use with upper elementary school children and is suitable for use with grades 5, 6, and 7. The instructional package currently available has been developed and refined in a fifth-grade setting. The ACT materials require a class mean grade-level reading score of 3.5 or higher. They have been designed to be culture, color, and gender free.

ACT consists of a sequential order of 4 units, divided into six parts each. Each unit builds upon the previous one, extending learner application of the six achievement steps: (1) self-study, (2) get goal ideas, (3) set a goal, (4) plan, (5) strive, and (6) evaluate.

The ACT package is programed on audio-tape and is designed to be used for three 45-minute periods per week for a semester. Parts are structured into lessons that can be used in 15-20 minute segments if the teacher prefers shorter periods.

ACT lessons are presented in a multi-media format, incorporating audio-tape cassettes, printed student journals, filmstrips, and games. Taped information, music, and dramatizations guide learners through the highly illustrated student journals. The journals serve as a record of personal information which the children use to set goals. The ACT materials then teach

a process which enables children to achieve these same goals. In a sense the interests of the children are a major part of the content of the materials. Additional materials not supplied but required are an audio-tape cassette player, a filmstrip projector, regular elementary school art and construction material, and a room equipped with movable furniture.

Each part of ACT presents information to the children, calls upon the student to engage in experiential activities, and requests application of information learned to real-life activities. Typically, students listen to a tape that presents concepts, engage in various activities using their own journals as directed by tape, and work individually or in small groups when the tape is turned off. Pretests and posttests are incorporated in the program at regular intervals.

Although the audio-tape leads the students through each ACT lesson, the teacher is called upon to assist in structuring many activities, to reinforce concepts, to assist individual children, and to correct some pages in the students' journals. The teachers' manuals with annotated scripts for each lesson guide the teacher's participation and provide answer pages for journal exercises and tests. In addition, teachers can foster the transfer of ACT skills to other school activities and out-of-school activities by motivating students to use ACT skills outside the ACT program, and by reinforcing students' transfer of ACT skills.

EXERCISE 3 - WORKSHEET

Data-gathering Methods for Achievement Competence Training (ACT) Program

FEATURE	INTER-VIEW	QUESTION-NAIRE	DIARY, JOURNAL	RECORDS, REPORTS	OBSER-VATION
A. Program is used only in grades 5, 6, or 7					
B. All students studying ACT should be at or above 3.5 grade level in reading					
C. The 24 program parts should be presented in sequence					
D. The program covers 1/2 year at rate of 2-2 1/2 hours per week					
E. Pretests and posttests are employed					
F. Multi-media materials are used					
G. ACT instructions on conducting unit activities are followed					
H. Students set goals and plan ACT lessons					
I. Students transfer ACT skills to other school activities					
J. Students transfer ACT skills to out of school activities					
K. Students keep a journal of their activities in ACT					
L. Students work individually or in small groups					
M. Teachers follow the manual for lessons					
N. Teachers assist students, correct journals, reinforce concepts					
O. Teachers guide students in transfering ACT skills to school activities					
P. Teachers guide students in transfering ACT skills to out-of-school activities					

EXERCISE 3 - ANSWER KEY

Data-gathering Methods for Achievement Competence Training (ACT) Program

	INTER-VIEW	QUESTION-NAIRE	DIARY JOURNAL	RECORDS, REPORTS	OBSER-VATION
A. Program is used only in grades 5, 6, or 7	✓	✓			
B. All students studying ACT should be at or above 3.5 grade level in reading	✓	✓		✓	
C. The program parts should be presented in sequence	✓	✓	✓	✓	
D. The program covers 1/2 year at rate of 2-2 1/2 hours per week	✓	✓	✓		
E. Pretests and posttests are employed	✓	✓	✓	✓	✓
F. Multi-media materials are used	✓	✓	✓		✓
G. ACT instructions on conducting unit activities are followed	✓	✓			✓
H. Students set goals and plan ACT lessons	✓	✓			✓
I. Students transfer ACT skills to other school activities	✓	✓			✓
J. Students transfer ACT skills to out of school activities	✓	✓		✓	✓
K. Students keep a journal of their activities in ACT	✓	✓		✓	✓
L. Students work individually or in small groups	✓	✓	✓		✓
M. Teachers follow the manual for lessons	✓	✓			✓
N. Teachers assist students, correct journals, reinforce concepts	✓	✓			✓
O. Teachers guide students in transferring ACT skills to school activities	✓	✓	✓		✓
P. Teachers guide students in transferring ACT skills to out-of-school activities	✓	✓	✓		✓

Explanation of Answer Key

You will note that the answer key checks all of the items A-P for Interview and Questionnaire. But note also that the questionnaire approach is not circled for any item, indicating that it is not considered to be the most adequate approach to getting data on any feature of ACT. The questionnaire method would be used as the primary source of data only when a more valid method could not be used. Often, of course, the questionnaire method is used to supplement data obtained by other means, as when one wishes to obtain some data from a large number of sources (teachers, classrooms, etc.).

The interview method has been checked as the most valid source of data on five of the ACT features. Note that these are structural features of the program (A, C-E) or a feature that does not offer data from observation (J).

Records or Reports is the column where the checkmarks are circled for features B and K. These features should show up on class rosters (feature B) or student products (feature K).

Observation is circled as the preferred method for those ACT features that would show up directly in instruction. Obviously valuable data on these features can be obtained from interview and questionnaires. However, to avoid inaccuracies that are common with these methods, chief reliance should be placed on observation in a representative sample of situations.

Setting Up a Plan for Assessing the Implementation of Program Features

Background Information

Assume that your task is to develop a plan for assessing the implementation of the features of a cooperative teaching program in Bigtown Intermediate School (grades 5-8). The program has the following 11 features:

1. Each team covers instruction in the four major curriculum areas of English, social studies, science, and mathematics.
2. There are 12 teams and each consists of four teachers and one full-time paraprofessional.
3. One teacher has the role of team leader with responsibilities for calling and chairing team meetings, resolving problems of team operation, and representing the team to the assistant principal.
4. There are about 120 students in a team.
5. Students in a team cover two grades, 5th and 6th, 6th and 7th, or 7th and 8th.
6. Each teacher on the team advises about 30 students with responsibility for advising them in both basic and special subjects.
7. Multi-disciplinary instruction is to be provided regularly by integrating material from two or more of the four basic subjects.
8. Nongraded advancement is provided; a student can advance at any rate, fast or slow, through the curriculum in each major subject.
9. Weekly team planning permits varying the amount of time different students spend on a subject and allows teachers to work with individual students, with small groups, or with class groups of 30-40 students.
10. Each day, all students in the team are assigned to special subjects (art, music, shop, PE, etc.) during a two-hour block of time that enables team members to attend team meetings, prepare lessons, etc.
11. The aide prepares lesson materials, grades objective exams, and monitors the use of learning materials and equipment.

Bigtown Intermediate School has four houses, each containing about 360 students covering grades 5-8. Each house has three teaching teams. The team program has been in operation for two years. An assistant principal is in charge of the cooperative teaching program at Bigtown and has responsibility

for assigning staff members and students to teams, for appointing team leaders, for the training given the teams, and for supervising team operations. She holds a weekly meeting with the 12 team leaders.

Planning Tasks for Assessing Implementation

Your responsibility is to plan an assessment of the implementation of each feature of the cooperative teaching program. Your plan will deal with identifying shortcomings in the implementation of any of the features in any of the 12 teams, but your chief purpose is to identify those shortcomings in implementation that occur in several, if not most, of the teams.

Assume that you have one month during which to obtain your data and that school is in session during that entire period. You have the full support of the assistant principal in charge of the program and the promise of cooperation from all of the team leaders. Any secretarial or clerical services that you need also will be available to you.

The planning that you will need to do can be broken into five sub-tasks, as follows:

1. Specifying the purposes and scope of the assessment of implementation.
2. Obtaining a representative sample of data on program implementation.
3. Choosing methods for getting data on implementation of program features.
4. Setting up a data-gathering schedule.
5. Planning how to analyze the implementation data.

These five tasks now will be considered in turn.

1. Specifying the purposes and scope of the assessment of implementation. Your overall objective in assessing the implementation of the features of the cooperative teaching program is to identify those features in which there are serious shortcomings in at least several of the twelve teams.

Recognizing that you have just one month to gather your data and that

you must do the job largely alone, you will want to plan use of your time wisely so as to net detailed and relevant information. Much of your data will have to be obtained through interviewing key people and through using questionnaires. Your time spent with each team will need to be limited to about one day of observation and one day of interviews with team members. Structural features of the program (1-6) can be investigated quickly with the use of questionnaires, and through interviews with the vice principal in charge of the program or team leaders. Using these methods for those areas will permit you to concentrate your time on the procedural features (7-11), whose implementation is harder to assess.

2. Obtaining a representative sample of data on program implementation. The problem of sampling the data potentially available on program implementation arises since you cannot hope to obtain complete data on the operating levels of features where there is variation from teacher to teacher and day to day.

You can obtain essentially complete data, and quickly, about the structural aspects of the program because you can assume that, at least for the period of your investigation, these elements will remain unchanged. The problem of sampling, therefore, centers on the functioning of the program. It is clear that you will not be able to obtain all the data you would like on any of these topics. Through interviews with team leaders in advance of observation, you can make more effective use of your time spent visiting a team since in this way you can learn where and when to look for evidence on team procedures. Also, it will help you greatly in getting accurate data on team procedures if you have a team member at your elbow when observing the conduct of student advising and instruction.

3. Choosing methods for getting implementation data. With the four team roles in mind, your job now is to decide which methods you will use to

gather data on the implementation of each feature of the cooperative teaching program. Remember, five types of investigation are available to you - interview, questionnaire, diary or journal, analysis of records or reports, and observation. Keep in mind that your time is limited, so you should choose those methods that are most economical of time and still capable of providing valid data.

In choosing your data-gathering methods, a first step is to plan how you will obtain data on the structural features of each team. Implementation of the structural features can be checked quickly enough by preparing a questionnaire to be completed by each team leader, though you may need to supplement your questionnaire with an examination of team rosters and schedules.

To assess the performance of the four roles you need to have data on whether the functions are performed, whether they are performed regularly, and whether they are performed well. Consider these questions in connection with each role.

For data on team members' performance of the roles of team leader, student advisor, instructor, and paraprofessional, you may rely chiefly on having the twelve team leaders, the 48 teachers (including the team leaders), and the twelve paraprofessionals submit reports on samples of their role performances. Probably, reports are needed for each day during one week, and they should follow a standard set of topics or questions so that they cover essential items and provide data from different respondents that can be combined readily. These diary-type records should be supplemented, where appropriate, by exhibits of schedules or reports and by observation and interview.

Probably the best way of acquiring data on team leadership is to ask

team leaders to keep a daily diary record of what they have done as team leaders during a period of one or two weeks. They should include in these accounts descriptions of any problems encountered in performing the role. You should specify the types of information required and offer a number of examples covering the spectrum of their duties. It helps considerably to provide report forms to the team leaders so that they can keep the task before them as they carry out their work.

To round out the leadership picture, plan to get observational data by attending a team meeting of each team to determine if they are well-focused, orderly, efficient, and friendly. More observational data on the smoothness of team functioning as members go about their individual tasks for the day will offer information from a slightly different perspective. Points of view other than that of each team leader (diary record) and you (observation) can come from questionnaire (or interview) evidence of team members' attitudes on the effectiveness of team planning and on cooperation among team members. And finally, valuable data on the quality of team leadership can be acquired from the vice principal in charge of the program.

Data on the performance of the advisory role can be obtained in several ways. First, a questionnaire to the 48 team teachers on their performance of the advisor's role is recommended. The questions should elicit a factual report on the frequency, length, and content of individual and of group advisory sessions. To ensure greater accuracy in these reports, it may be desirable to observe what teachers do during the daily two-hour period when students are in special subjects. Are students called in for individual conferences? What takes place? You may want some more detailed information on the role and might consider asking teachers to present a diary record of advising for a one- or two-week period. Then too, interview data from team

leaders and the vice principal should be sought for general information on the performance of the advisory function.

Exercise 4 gives you practice in conceptualizing and listing content areas of needed data on the role of advising students. When you have completed the exercise, turn to the Answer Key that follows to compare your ideas with those suggested there.

EXERCISE 4 - WORKSHEET

Outline for Obtaining Data on Advising Students

Directions: Assume that your purpose is to obtain data on how many advisory conferences a teacher has with individual students or groups, on the purposes of those conferences, on their content, on their duration, and on what effects the conferences have. What are questions you would want answers to in a questionnaire to teachers on their general performance of the advisory function, and topics you'd want teachers to report on in a diary record of one week's advisory conferences?

Questions in a questionnaire for team teachers on student advisory conferences:

Topics for a teacher's daily record on advisory conferences:

EXERCISE 4 - ANSWER KEY

Outline for Obtaining Data on Advising Students

In the list of features of the cooperative teaching program, it was specified that each team teacher would have about 30 students with the responsibility of advising them on progress and problems in both basic and special subjects.

The following lists of suggestions are meant to help you check the questions or topics you listed on the Worksheet for Exercise 4.

Questions in a questionnaire for teachers on their student advisory conferences

These are some aspects of the advisory function on which data would be valuable:

- Number of advisory conferences held, on the average, during a week (or month)
- Per cent of these conferences held with groups, and groups of what size
- Per cent of conferences held with individual students and reasons for these conferences
- Frequency of conferences with any given student
- Length of conferences with students
- Content of conferences
- Ways of getting data from the student's different teachers as a basis for total-program advising
- Decisions, plans reached in conferences
- How decisions are reached and who has input (students?)
- Teachers' views about the advisory program: strengths and weaknesses

Topics for a teacher's diary report on student conferences

For each reporting day, list the student conferences held and, for each, report the following:

- With whom the conference was held
- Who initiated the conference
- Purpose of the conference
- Duration of the conference
- What was discussed
- How the conference was based on information from the student's teachers
- Decisions reached at the conference
- Follow-up actions (reporting to other teachers or team leader; plans for future conferences, etc.)

Instruction in the cooperative teaching program calls for a multi-disciplinary approach, nongraded advancement, and flexibility in scheduling and grouping. You will have to rely primarily upon observation to assess the manner and degree of implementation of these features. However, with each of them, you can get data on the general ways in which they are implemented through interviewing the vice principal and team leaders. Also, valuable data can be obtained by examining weekly schedules planned during the team meetings, by requesting samples of lesson plans to check on multi-disciplinary instruction, and by asking for records which indicate that students in the same grade are permitted to advance at different rates in the major subjects.

The value of diary reports by team members on the conduct of instruction must not be overlooked. In fact, obtaining such reports before you visit a team would be of great help to you in orienting your observations and your questions to team members. If the diary reports from all team members covered the same period of days, you could combine them to get a picture of instruction for the whole team that would reveal, for example, how much flexibility in scheduling and grouping occurred.

Since instruction in a team varies considerably from day to day, it is important that you try to visit a team on a day when all of the major curriculum areas are covered and when there are no unusual events scheduled. You would have to check with the team leader a few days before you planned to visit in order to determine if that particular day was suitable. Having some open dates in your schedule offers considerable leeway in case it is necessary for you to rearrange your visit.

When observing a day's instruction in a team, it is essential that you use standard procedures for observing and reporting. Otherwise, you cannot be certain that you are covering essential aspects of instruction or that your

data could be combined readily once obtained. One observation method that facilitates easy collation is the use of a checklist with questions pertaining to the program under study. The observer simply checks the appropriate boxes during a particular time span, say, a class period, and briefly notes the evidence leading to choices. This approach yields categorized data but, as might be expected, it does not provide the rich detail common to other methods, such as the running account, in which the observer writes down everything that happens within a given time period and keeps a time line in the left margin. In that method, each activity is described specifically in terms of the lesson, the students, the teacher(s), and the aide(s).

A difficulty in writing detailed reports of observations is that you cannot observe and write at the same instant. Also, it often is not desirable to be seen writing notes on your observations. Thus, you may need to find a private place several times a day for writing your most recent observations. This difficulty usually is manageable in completing a checklist.

Try Exercise 5 now, which calls for you to develop a list of questions that might be useful for an observation checklist. Remember that the questions must be stated in such a way as to elicit a yes/no response; for example:

> "Are pre-tests used to determine what parts of a unit a student needs to study?"

You will note that there are three categories on the worksheet:

1) Multi-disciplinary instruction

2) Nongraded advancement

3) Flexible scheduling and grouping

Your questions should be pertinent to these categories. A brief review of the list of features of the cooperative teaching program may be helpful to you at this point.

After completing your list of questions, turn to the Answer Key that follows to compare your checklist with the one suggested there.

EXERCISE 5 - WORKSHEET

Developing an Observation Checklist

Directions: Under each of the three headings, write a list of questions for which you would seek answers when observing instruction by a team.

Team Leader_____ Grade level of team: 5-6____ 7-8_____

Teacher_____ Subject(s) Taught: _____

Student(s) Taught_____ Date_____ Time Period _____

Observer_____

	YES	NO	EVIDENCE
MULTI-DISCIPLINARY INSTRUCTION			
NONGRADED ADVANCEMENT			
FLEXIBLE SCHEDULING AND GROUPING			

EXERCISE 5 - ANSWER KEY

Developing an Observation Checklist

Explanation: The following are recommended questions. Doubtless you have thought of other valuable ones.

MULTI-DISCIPLINARY INSTRUCTION

1. Are materials from two or more of the four basic subjects integrated?
2. Does this integration occur fairly frequently?
3. Does the integration appear to be meaningful and relevant to the lesson at hand?
4. Does the student appear to be confused at the integration of two content areas?
5. Do materials lend themselves to integration?

NONGRADED ADVANCEMENT

1. Are students from different grade levels studying same lessons?
2. Are students from the same grade level working on tasks at different levels of advancement?
3. Are students in lower grade level of team studying at a level below usual for their grade?
4. Are students in upper grade level of team studying at a level above usual for their grade?
5. Does nongrading apply to individual pupils?
6. Does nongrading apply to groups of pupils?
7. Can pupil differentiate own level of work?

FLEXIBLE SCHEDULING AND GROUPING

1. Do different students spend different amounts of time on a given subject?
2. Do teachers work with individual students?
3. Do teachers work with small groups?
4. Can individual students spend less (or more) time on one subject than on another?
5. Can students work in groups of 2-3 to provide help to one another?

Finally, obtaining data on the paraprofessional function of the cooperative teaching team also can employ several methods. Asking each aide to keep a specific, detailed diary record for one or two weeks probably is the best way to get cogent information on the performance of this role. Once again, it is advisable to provide report forms (as was recommended with team leaders) so that the aides can keep this additional task in mind as they carry out their regular duties. An example of such a report form is presented on the following page. Is there anything that you would add to it?

In addition, interview data from the team leader on strengths and weaknesses in the aide's work should be obtained. Teachers' attitudes about the help that they receive from the aide should be explored as well. While observing the team, you will be able to get a notion of the aide's role performance for a clearer profile.

PARAPROFESSIONAL'S REPORT ON ONE DAY'S ACTIVITIES

Your name_____ Date this report is for_____

Team leader's name_____ Grade levels of team: 5-6___ 6-7___ 7-8___

Directions: Please indicate below, in chronological order, the activities you performed during the day being reported. Include such tasks as preparing materials, working with students, conferring with teachers, attending team meetings, and any others in which you engage. Be specific. When several activities occurred at once, please indicate what they were. For each activity or set of activities, indicate the time period in the left margin. Be as accurate as possible in noting the amount of time spent on an activity. You may continue on the back of this sheet and then go on to a second page if you need space.

Time Period From - To	Activities

4. Setting up a data-gathering schedule. Setting up a schedule for collecting information on the implementation of the cooperative teaching program would require taking account of four sets of factors.

a. The types and amounts of data needed and the time required by the investigator and by respondents during the data-gathering process.

b. The order in which different sets of data should be obtained in case some of it would set the stage for gathering other information.

c. The periods of availability of needed data from various sources.

d. The period of time during which all of the data have to be gathered.

Assuming you have the task of gathering the data, what types and amounts would be needed? Consider these suggestions:

--Diary records on 5-days' participation in instruction by each member of each of the 12 teams (48 teachers and 12 paraprofessionals)

--An interview with each team leader on team structure and procedures.

--Diary records on one week's team leadership by each of the 12 leaders.

--One day's observation of instruction in each of the 12 teams.

--Observation of one team meeting held by each of 6 teams.

--Observation of student advising by one member of each of 6 teams.

--Questionnaire returns from all team members on how they perform the functions of team planning, student advising, instructing individuals and groups, or performing paraprofessional duties.

The time required for obtaining these sets of data would relate mainly to you. However, when you wanted to conduct interviews with team personnel, you would have to find up to an hour when each was free of other duties. This time probably could be found during the daily two-hour period when the students were studying the special subjects. Presumably, team members could find time in their schedules to keep diary records and to fill out questionnaires.

Assuming you had just one month to collect your data, you could make a plan for using the 21 or 22 days available to you to obtain all the types of data required. Here is the sort of time plan that would meet your requirements. It assumes, of course, that you would spend time beforehand in planning your data gathering and time afterward in analyzing your data.

TIME ASSIGNED TO DATA-GATHERING TASKS

DATA-GATHERING TASK	TIME ALLOTTED
1. Interviewing the vice principal in charge of the cooperative teaching program	3 hours
2. Reviewing reports, schedules, lesson plans, and other written matter	2 days
3. Interviewing each team leader on team structure and procedures	2 days
4. Obtaining questionnaire data from team members (time required for explaining procedures, distributing and collecting replies)	3 hours
5. Obtaining diary records from team members (time required for explaining procedures, distributing and collecting replies)	3 hours
6. Observing one day's instruction by each of 12 teams	12 days
7. Observing a team meeting held by each of 6 teams	1 day
8. Observing student advising by one member of each of 6 teams	1 day

The performance of the different data-gathering tasks necessarily would overlap considerably. However, in general, the tasks should be performed in roughly the order in which they are listed. The first four tasks would give you many valuable leads for conducting the tasks calling for observation.

The time estimates given call for approximately 18 of the 21 or 22 days available during one month. Twelve of these days are tied up with observing instruction. During the other days, your time would be divided among such

tasks as interviewing team leaders, administering questionnaires, observing student advising, or observing team meetings.

5. Planning how to analyze the implementation data. The purpose of assessing program implementation is to identify shortcomings in the installation of program features as a basis for planning ways to remedy those shortcomings. When the implementation data have been obtained, they need to be analyzed to arrive at a summary of the shortcomings of implementation found.

The procedure to follow in obtaining this summary of shortcomings begins with listing the program's features. Each feature should be broken down into sub-features in preparation for pinpointing the shortcomings found. To illustrate this, consider the features of the cooperative teaching program listed on page 36. Here is how two of the features could be broken into sub-features in preparation for the data analysis:

Feature 9. Flexible scheduling and grouping

a. Planned by the team each week

b. Providing for varying the time different students spend on a given subject

c. Allowing teachers to work with individual students, small groups, or usual-sized groups

Feature 11. The aide has these functions

a. Preparing lesson materials

b. Grading objective exams

c. Monitoring the use of learning materials and equipment

Armed with this list of program features and sub-features, your task now becomes that of setting up data analysis and summary sheets for each feature. In the case of the cooperative teaching illustration, you would need to have

separate data analysis sheets for the 12 teams since shortcomings are apt to be true of certain teams but not others.

Begin your analysis with the structural features of the program under study. This part of the analysis usually takes less time and judgment than the analysis of implementation of procedural aspects of the program. It usually is found that shortcomings in program implementation are less frequent with the structural aspects of a program than with the procedural ones. However, when structural features are not implemented, this almost guarantees that the related procedural features will not be well implemented, if they are at all. For example, if a curriculum program calls for the use of certain supplementary learning materials and those materials are not provided, teachers will not be able to perform those functions involving the use of the supplementary materials.

Even with regard to structural features of a program, you will find contradictory evidence when you compare data obtained by different methods or from different informants. Resolving such contradictions calls for deciding which evidence is most trustworthy. Your direct observations are likely to be more accurate <u>for the time of your observation</u> than data from any other source. However, since you could not observe more than for a very brief time, your observations may not be representative of what normally happens. Generally, when data from two or more sources are in agreement, you are on safer ground trusting the data than when there is a lack of such agreement.

In obtaining evidence on shortcomings in program functioning, a combination of diary information and your own observations should give you the best basis for drawing conclusions on the implementation of procedures. The diary information, if it reports "what happened today" is likely to be of great value in giving the "big picture" though people tend to report their

own performance in the most favorable light that is consistent with truthfulness. Your observations will offer both a check on diary reports and a more detailed picture of what happened.

Your plan for data analysis should call for a summary statement on the shortcomings of program implementation identified in your investigation. For each shortcoming found, your summary should identify it as accurately as possible, should indicate its degree, and should specify its extent. For example, using the cooperative teaching illustration, if you found that non-graded advancement was poorly implemented, your summary should point out the curriculum areas where it was not effectively practiced; should designate the ways that instruction failed to provide for different rates of advancement; and should indicate how widespread the failure was (e.g., true of 9 of the 12 teams).

Your plan for data analysis should provide for checking your conclusions with key local personnel. (Of course, if you had been working with local personnel throughout the assessment of implementation of the program, this inside interpretation of events would have been provided all along.) The advantage of this check of your conclusions is that, very often, local personnel can explain situations that led you to distort your data and draw incorrect conclusions.

SUMMARY

Briefly, Objective 2 was concerned with developing a plan for assessing the implementation an an educational program and it involved you in the activities listed below.

1. Identifying methods for obtaining data on the implementation of program features:
   a. Interview
   b. Questionnaire or inventory
   c. Analysis of diary or journal entries
   d. Analysis of records or reports
   e. Observation
2. Setting up a plan for assessing the implementation of program features:
   a. Specifying the purposes and scope of the assessment of implementation
   b. Obtaining a representative sample of data on program implementation
   c. Choosing methods for getting data on implementation of program features
   d. Setting up a data-gathering schedule
   e. Planning how to analyze the implementation data

An illustration of a one-month investigation of a cooperative teaching program was used as a vehicle for examining the various aspects of planning such an assessment.

Objective 3. Design a plan for conducting a causal analysis of shortcomings in the implementation of an educational program.

Once you have identified the shortcomings of implementation of the program under study and have developed a list of these shortcomings for each program feature, you must then consider the factors probably causing those problems. Discovering these causes is an essential step toward improving implementation of the program.

Listing Potential Causes of Shortcomings Identified

In undertaking a causal analysis of shortcomings of implementation, the first task is to draw up a list of potential causes for each shortcoming. Using your knowledge of school systems, think of factors which might affect the implementation of the program feature in question. Does the system provide sufficient materials and equipment for the program's operation? Do the custodians discourage moving furniture around in the classrooms with the result that flexibility in grouping is hampered? Do line staff favor and support the program? Etc.

Spend some time reviewing your notes and checking your memory for cues you picked up while gathering data on program implementation. Also, consider the suggestions given to you by program personnel when they examine your list of shortcomings. Allow your imagination to come into play as a valid means of brainstorming potential causes of shortcomings in the program.

Exercise 6 asks you to develop a set of likely causes for a shortcoming in implementing the role of student advisor by members of a teaching team. In the list of features of the Bigtown cooperative teaching program, each team teacher served as advisor to about thirty students. The role called for seeing each student regularly to advise on progress in both basic and special subjects.

Suppose that you found the following items to be frequent failures in the performance of this role:

a. Most of the teachers met with students only in groups, or on an individual basis only when the student or his/her teachers reported some special problem.

b. Most of the teachers did not attempt to help individual students view their progress and problems at school and work with them to arrive at solutions.

c. Most of the team teachers did not concern themselves with their advisees' progress outside of the four basic curriculum areas taught by the team.

With these failures in mind, turn to the worksheet for Exercise 6. Think of undesirable conditions or incorrect procedures that may be present and of desirable conditions or procedures that may be absent. When you are finished with the exercise, check your work with the Answer Key that follows.

EXERCISE 6 - WORKSHEET

List of Likely Causes for a Failure to Advise Individual Students

Directions: Your task is to think of plausible reasons why a majority of team teachers failed to perform adequately the role of advisor to 30 students in the team. What may have been causes of this shortcoming? -- Scheduling? Grouping? Lack of directions? Conflict with other duties? Offer the possible causes that occur to you in the space below.

EXERCISE 6 - ANSWER KEY

List of Likely Causes for a Failure to Advise Individual Students

There are many possible causes for the team teachers' failure to fulfill the assigned role in advising individual students. Putting together a list of likely causes requires knowledge of schools, teachers, and team teaching, as well as an active imagination. The list below is not the answer to Exercise 6. Instead, it represents one set of plausible reasons.

The failure of many team teachers to advise individual students regularly on progress in both basic and special subjects may be due in part to:

The lack of a clear and specific plan for the advisory function

Schedule conflicts where advising a student would require interrupting other scheduled duties

Reluctance of teachers of special subjects to be cooperative in reporting a student's progress and problems

Teachers' lack of belief in the importance of advising students on their total program

Teachers' preference for seeing students primarily or only when problems arose

Lack of training of the team teachers in the conduct of student advising

A preference of teachers for group rather than individual advisory sessions

Remember, the above is in no sense an official or "right" list of likely causes for shortcomings in the conduct of the advisory function. It is just one suggested list.

Investigating Potential Causes of Shortcomings

To this point, you have studied the first part of the causal analysis of shortcomings--preparing lists of plausible causes of the shortcomings that have been identified. The next task is that of planning an investigation to determine which of the plausible causes listed, or others not yet identified, are actual causes.

Planning an investigation into causes of a shortcoming calls for taking each potential cause listed in turn and specifying how data could be obtained to check on whether it actually was at least a partial cause of the shortcoming.

In planning your investigation, you will need to decide where to turn for data on each potential cause to be checked. If the program you are seeking to improve has a coordinator or director, your first step should be to seek information from this source on the validity of any of the potential causes you have listed (or others the coordinator considers to be operating). Also, the coordinator can offer valuable advice on where to turn for the evidence you need. Your search for data on actual causes for shortcomings in program implementation is important and justifies your taking as much time as you need to obtain a good "fix" on the causal factors that are producing faulty implementation.

Planning a causal search can be illustrated with a list of likely causes for a failure to provide for nongraded advancement in the cooperative teaching program. These plausible causes are listed on the following pages with suggestions for how each one might be investigated. You are invited to add your own ideas to those suggested.

Failure to Provide Nongraded Advancement

Potential cause: The cooperative teaching plan may fail to specify how nongrading is to be accomplished.

Suggestions on search for evidence:

Ask the vice-principal in charge of the program for a written description of the cooperative teaching program and check it for provisions on planning and conducting nongrading.

If there is no written description of program features related to nongrading, ask for an oral account and ask how team members were informed.

Your own suggestions:

Potential cause: There may be a lack of individualized learning materials needed if students are to advance at individual rates.

Suggestions on search for evidence:

Ask the vice-principal and some of the teachers to show you what materials are available that students can work with independently; also ask how these materials are assigned and used.

Observe instruction in a few situations where individualized materials might be found in use.

Your own suggestions:

Potential cause: Teachers may fail to favor nongrading either because they consider it undesirable or very hard to achieve.

Suggestions on search for evidence:

Ask the vice-principal and some of the team leaders to report their attitudes about nongrading (desirability and difficulty) and also to report how they think teachers in the team feel about nongrading.

Ask a sample of team teachers what their views and feelings about nongrading are.

Your own suggestions:

Potential cause: There may be a lack of planning for nongrading when the team sets up plans for the next week's scheduling and grouping.

Suggestions on search for evidence:

Ask several team leaders to show you plans for the current week and to point out to you ways in which those plans make provisions for students of the same grade advancing at different rates.

Your own suggestions:

Potential cause: Problems posed by multi-disciplinary instruction may make it difficult at the same time to foster nongrading.

Suggestions on search for evidence:

Ask team leaders to show you plans made for multi-disciplinary instruction and to point out how these plans permit or hinder nongrading.

Observe multi-disciplinary instruction as conducted by one teacher in each of several teams and determine whether any nongrading is provided for in at least one of the disciplines involved.

Ask a number of teachers whether they can let students advance at different rates in at least one of the disciplines involved when they do multi-disciplinary teaching.

Your own suggestions:

Potential cause: There may be a lack of needed teacher education on nongrading with the result that teachers do not know how to conduct it.

Suggestions on search for evidence:

Ask the vice-principal what sort of teacher education for nongrading was given and what sort of supervision is provided to assist teachers in understanding and practicing nongraded instruction.

Ask a sample of team leaders and teachers what they understand nongrading to be, how it can be conducted, and what problems they see in trying to conduct it.

Your own suggestions:

Having reviewed the example of investigating causes for failure to provide for nongraded advancement, try Exercise 7, which asks you to carry out a similar analysis for the role of advising students. Potential causes for failure are provided; you are asked to suggest sources for obtaining evidence about them.

Check the Answer Key that follows after completing the exercise.

EXERCISE 7 - WORKSHEET

Search for Evidence on Likely Causes of Faulty Program Implementation

Directions: For each of the following potential causes of teachers' failure to advise the students assigned to them (regularly, individually, and on their total programs), write your recommendations for sources of evidence.

POTENTIAL CAUSE OF FAULTY ADVISING	SUGGESTED SOURCES OF EVIDENCE
The program plan may lack specific provisions for conducting individual advisory conferences.	
There may be schedule conflicts so that advising a student would require interrupting other scheduled duties.	
Teachers of special subjects may be reluctant to cooperate in reporting a student's progress and problems to his advisor.	

POTENTIAL CAUSE OF FAULTY ADVISING	SUGGESTED SOURCES OF EVIDENCE
Teachers may doubt the importance of advising students regularly on their total programs.	
Teachers may wish to see students when they have problems rather than on a regular basis.	
Teachers may prefer to advise students in groups rather than in individual conferences.	
Teachers may lack the needed training in planning and advising individual students.	

EXERCISE 7 - ANSWER KEY

Search for Evidence on Likely Causes of Faulty Program Implementation

Probably you have found in performing Exercise 7 that the search for evidence on causes of faulty implementation should be very similar for both shortcomings in nongrading instruction and in student advising.

Obtaining evidence on how well the program plan described the conduct of student advising calls for asking to see the program plan or asking for an oral report on its provisions if they were not set in writing.

Teachers' problems with scheduling advisory conferences could be investigated by asking team leaders or teachers to show you such conflicts in their schedules and to point out difficulties they had in resolving those conflicts.

Teachers' attitudes and preferences with regard to conducting advisory conferences can be learned through interviews, although reports by the vice principal or team leaders can be valuable as well.

Determining whether teachers had received the training they needed for planning and conducting student advising requires evidence from the vice principal, team leaders, and teachers themselves. If teachers cannot explain the purposes and procedures of the advisory function, their training could not have been adequate.

SUMMARY

Objective 3 has dealt with analyzing shortcomings in the implementation of program features to determine their causes. Two steps in the process were reviewed:

1. Listing likely causes for each shortcoming

2. Gathering data on likely causes to determine which are actual causes

The purpose of the causal analysis is to focus activities directed toward improving program implementation. Thus, if the failure to implement certain program features can be attributed to a lack of the needed staff training, this provides a specific basis for planning improvements in implementation.

Once the needed causal data were obtained, you would be ready to set about developing a plan for overcoming shortcomings in program implementation. This is the function of Objectives 4 and 5 of this unit.

Objective 4. Design a plan for identifying and evaluating resources likely to overcome the shortcomings identified..

Having identified shortcomings of implementation of features of a local educational program, and having probed factors that are probable causes for these shortcomings, your next task is to survey various "resources" that could be employed to remedy the shortcomings of implementation. Remember, the purpose is not to locate another program that might replace the present one. Rather, the purpose is to make the present program function better. (Of course it could turn out that the present program, even when effectively implemented, failed to meet its objectives successfully and should be abandoned in favor of some other program. In that event, Unit 8 of this training program, Selecting an Educational Improvement Program, would be relevant.)

By resource is meant any procedure or materials that could overcome a shortcoming in implementation. A resources search means consulting various sources that might provide information about useful resources. The resources you are seeking may be discovered anywhere, including the local situation.

How should you plan a resources search to locate and evaluate resources that could overcome shortcomings of implementation of a local educational program? It is a safe assumption that your time for this will be limited and that you will need to make strategic use of the sources available to you. Basically, your task is to obtain information about procedures or materials that have been used successfully elsewhere in implementing program features that are not being effectively implemented in the local program you are seeking to strengthen. Where should you turn for such information?

Your first step should be to seek informants who can give you expert advice, either on how to solve the implementation problems you are concerned

with, or on where to turn for the information you need. Where can you find such experts? Field consultants of your state education department (including its intermediate or county units) provide one key source. They may be able to direct you to school districts in the state that have dealt with some of the same implementation problems you are facing. Phone calls or visits to these districts then could follow. Also, in numerous states, there are education information centers (often associated with the state education department) whose job is to locate and report information on any aspect of educational practice. These centers have full access to the literature of education as well as extensive knowledge about educational agencies or individuals who can offer expert advice or assistance with various problems. Another key place to turn is the school of education of a neighboring university whose faculty is apt to contain one or more members with expert knowledge of the sort of program you are concerned with.

The Educational Resources Information Center (ERIC) of the U. S. Office of Education is a source of reports on many topics in education. Your state education department can tell you how to make use of this source, in case you are not already familiar with it. In addition, there are 16 Clearinghouses, each charged with maintaining up-to-date abstracts of information within its area of specialization - career education, reading and communication skills, teacher education, etc. A list of the ERIC Clearinghouses is given on the following page.

In every area of educational practice, there is an extensive literature describing different programs, procedures, materials, or equipment that have been employed. Journals of educational organizations are especial y apt to contain the specific information you need on how to solve implementation problems. For example, The American School Board Journal, January 1975 issue,

ERIC Clearinghouses Each of the 16 clearinghouses, as well as acquiring, reviewing, abstracting, and indexing the documents announced in Research in Education, also prepares bibliographies and interpretive summaries of research which appear in Research in Education and are disseminated through the ERIC Document Reproduction Service. Because clearinghouses have limited resources for providing detailed replies to inquiries for information on specific topics, educators are urged to subscribe to Research in Education and obtain the other ERIC publications to search for desired information.

ERIC Clearinghouses and their addresses are listed below:

ERIC CLEARINGHOUSES ON . . . .

CAREER EDUCATION
204 Gabel Hall
Northern Illinois University
DeKalb, Illinois 60115

COUNSELING AND PERSONNEL SERVICES
University of Michigan
School of Education Building, Room 2108
East University & South University Sts.
Ann Arbor, Michigan 48104

DISADVANTAGED
Teachers College
Columbia University
Box 40
New York, New York 10027

EARLY CHILDHOOD EDUCATION
University of Illinois
805 W. Pennsylvania Ave.
Urbana, Illinois 61801

EDUCATIONAL MANAGEMENT
University of Oregon
Eugene, Oregon 97403

HANDICAPPED AND GIFTED CHILDREN
The Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091

HIGHER EDUCATION
George Washington University
One Dupont Circle, N.W., Suite 630
Washington, D.C. 20036

INFORMATION RESOURCES
Stanford Center for Research and
Development in Teaching
Stanford, California 94305

JUNIOR COLLEGES
University of California at Los Angeles
Powell Library, Room 96
405 Hilgard Ave.
Los Angeles, California 90024

LANGUAGES AND LINGUISTICS
Center for Applied Linguistics
1611 North Kent Street
Arlington, Virginia 22209

READING AND COMMUNICATION SKILLS
National Council of Teachers of English
1111 Kenyon Road
Urbana, Illinois 61801

RURAL EDUCATION AND SMALL SCHOOLS
New Mexico State University
Box 3 AP
Las Cruces, New Mexico 88003

SCIENCE, MATHEMATICS, AND ENVIRONMENTAL EDUCATION
Ohio State University
400 Lincoln Tower
Columbus, Ohio 43210

SOCIAL STUDIES/SOCIAL SCIENCE EDUCATION
Social Science Education Consortium, Inc.
855 Broadway
Boulder, Colorado 80302

TEACHER EDUCATION
American Association of Colleges for
Teacher Education
One Dupont Circle, N.W., Suite 616
Washington, D. C. 20036

TESTS, MEASUREMENT, AND EVALUATION
Educational Testing Service
Princeton, New Jersey 08540

contains an article describing ways different districts have attempted to deal with violence in the schools. Turning to the Education Index is a good way of gaining access to articles reporting problem-solving approaches that have been used in different school districts.

In a good many current areas of concern, Education U.S.A. Special Reports, published by the National School Public Relations Association, give up-to-date information on school practices. These reports are available, for example, in the areas of informal education, alternative schools, student rights, drugs, vandalism and violence, individualization, vocational education, and differentiated school staffing.

Since the problems you are concerned with involve improving the implementation of a school program, rather than with introducing a new program, you will need to cull the information contained in the literature carefully to glean items that focus on program implementation. It is unfortunate that there are relatively few books or articles that deal primarily with overcoming problems of implementation. However, if you have clearly identified shortcomings of program implementation, and if you have pinpointed likely causes for those shortcomings, a careful search of the literature will probably yield numerous approaches that school districts have used to make programs work more effectively.

An illustration will help make your task clear. Consider the problem of correcting shortcomings in implementing nongrading in the cooperative teaching program at Bigtown Intermediate School as dealt with in Objectives 2 and 3. For convenience, let us limit the illustration to nongrading mathematics instruction where the purpose is to have each student work at a level appropriate to his present advancement, and progress at whatever pace he can master learning tasks. Assume that your analysis of implementation

has indicated the following:

Shortcomings of implementation

1. Students are grouped by general achievement level and all students in a class are taught the same learning unit at a given time.

2. In a class, all students work on a unit using the same learning materials.

3. Students in a class all are moved to thennext learning unit at the same time even though some have not mastered the unit just studied.

Causes of faulty implementation

1. Teachers lack sub-tests for measuring students' level of mastery of each unit in the math sequence.

2. There is only one set of materials for studying a learning unit, rather than alternative sets of materials (including manipulative materials) for a given unit.

3. The math teachers have not had in-service training on methods of adapting instruction to individual differences among students within a class.

From this analysis, you need to seek resources that will provide achievement sub-tests, alternative learning materials, and appropriate in-service training for teachers. Thus, your efforts should be to find ways of overcoming causes of faulty implementation as ways of overcoming the shortcomings noted.

If you are not already familiar with the literature on nongrading, a good way to start is to review one or more of the basic treatments of the subject. The following four books are important general references:

Goodlad, J.I., & Anderson, R.H. The Nongraded Elementary School. (Rev. ed.) New York: Harcourt, Brace, & World, 1963.

Brown, B. F. The Nongraded High School. Englewood Cliffs, N.J.: Prentice-Hall, 1963.

_____ The Appropriate Placement School. West Nyack, N.Y.: Parker, 1965.

Hillson, M., & Bongo, J. Continuous-Progress Education. Palo Alto, California: Science Research Associates, 1971.

In reviewing any of these volumes, you will find relatively little that is specific about problems of implementation. Yet careful skimming of their contents will give you key ideas on how features of nongrading can be put into operation. Thus, Brown's book on nongrading in the high school presents a "multi-phase" approach that adapts to the learning capabilities and styles of different students, and the Hillson-Bongo book contains outlines for in-service workshops for teachers (pages 135-152).

Three sources of information probably will prove useful: consulting with experts to whom you are referred (perhaps by consultants from your state education department), visits to school districts employing nongraded programs at the intermediate level, and descriptions of nongraded practices contained in education journals. For guidelines on achievement sub-tests geared to curriculum units, some of the best sources are the descriptions of individualized programs such as Individually Prescribed Instruction (IPI) where each learning unit (in mathematics, reading, spelling, or science) has its pretest and posttest for measuring precisely the achievement of learning objectives. (See Teaching in IPI Mathematics: A Multi-Media Program of Teacher Preparation. Volume 1. Diagnosing and Prescribing for Individualized Instruction. New York: New Century, 1972.)

Let us suppose that your search turned up a half-dozen or more resources for correcting each of the three causes judged to be limiting the implementation of nongrading. Suppose that your reading, interviews, and visits located a number of nongraded math programs equipped with achievement sub-tests geared to learning units, several intermediate-level math programs providing alternative materials for study of a given unit, and several in-service programs designed to train teachers in nongrading math instruction. What procedures should you follow in evaluating these resources for use in improving

the implementation of nongrading in your local instructional program?

Three criteria are important in evaluating any resources for inclusion in your approach to improving the implementation of the local program. These are relevance to local needs, evidence of effectiveness, and feasibility of local adoption. By way of example, an in-service teacher education program on nongrading might be judged relevant through covering all aspects of nongraded instruction where the local teachers were found to be deficient. It might be judged effective on the basis of evidence of students' individual progress in math, of teacher satisfaction, and of administrators' approval. However, it might be judged not feasible of local adoption because it required more time and money to conduct than the local district could provide.

In evaluating a resource for adoption, it often will be the case that the resource contains elements that would meet local needs if adapted to the specific features of the local program. For example, the achievement sub-tests of math Program X might provide an excellent model for use in the local situation; however, the local math sequence might be different from that in Program X so the model would need to be adapted by building sub-tests geared to the local curriculum.

Conducting this process of evaluating potential resources for adoption is a task that tests anyone's capabilities to the limit. Even an expert in evaluation is almost certain to find that there is not enough good evidence available to make confident judgments. Your task will be to make the best use of evidence in making your judgments, realizing that some of the evidence may be untrustworthy or inadequate. Judging relevance is a matter of matching elements of the resource with the needs you need to meet. Thus, suppose that teachers need to learn how to locate children in a nongraded curriculum sequence, how to provide them with the learning tasks they are ready to study,

how to assist them as they study on an individual or group basis, and how to determine when students are ready to proceed to the next learning task. Do you find in accounts of the teacher-education resource that provisions for these elements are included?

Judging the effectiveness of the resource may be extremely difficult since it very often is true that there are no data on this criterion except for opinions of those who have used the resource. You may have to rely on these opinions, in the absence of objective evidence. In this case, it is important that you note the sort of evidence available to you and state your degree of confidence in your judgment.

Judging the feasibility of adopting the resource in the local situation calls for checking for evidence that the time, money, and leadership needed are available, and that attitudes about adopting the resource are favorable. Generally, after you have made your initial estimates of feasibility, it is important to obtain the reactions of key decision makers who will be involved in adopting the resource, and of key participants such as principals and teachers.

The end product of your resources search should be a priority listing of resources related to each of the causes of faulty implementation you were seeking to correct. Under each resource listed, you should have information on that resource's relevance, effectiveness, and feasibility. With these listings in hand, you would be ready to undertake the final task in the process of planning to improve the implementation of the local educational program. This task - actually planning to accomplish the needed improvements - is the substance of Objective 5 of this unit.

To give you practice in thinking through the process of conducting a resources search, Exercise 8 follows. You are asked to create your own

example by selecting a (real or simulated) local educational program, indicating one shortcoming of its implementation, and specifying one cause for that shortcoming. The program you choose can be of any type and at any level of schooling: the conduct of instruction using a new curriculum in a subject such as reading, math, or science; a program of school/community relations; a program to deal with discipline problems; a modular-scheduling program; a program employing teacher aides; etc. The exercise calls on you to outline a process you might follow in turning to different sources in search of resources that could remedy the shortcoming by dealing with its cause. Finally, the exercise calls on you to describe a (real or simulated) resource that could remove the shortcoming, then to indicate how you would evaluate it for local adoption.

When you complete the exercise, turn to the Answer Key that follows the Worksheet to check your work with the suggestions contained in the Answer Key.

EXERCISE 8 - WORKSHEET

Outlining a Plan for Conducting a Resources Search

Directions: First, select a local program (A) and indicate one shortcoming of implementation (B) and one cause for that shortcoming (C). (These can be either real or simulated.) Next outline the process you might follow in turning to different sources to locate resources that could remedy the shortcoming (D). Finally, take one (real or simulated) resource (E) and indicate how you would evaluate it for local adoption (F). When you complete the exercise, turn to the answer key for guidelines to use in checking your work under D and F.

A. BRIEF DESCRIPTION OF LOCAL PROGRAM CHOSEN

B. ONE SHORTCOMING OF PROGRAM IMPLEMENTATION

C. ONE CAUSE OF THE SHORTCOMING

D. PROCEDURE FOR RESOURCES SEARCH

(Continue on next page if more space is needed)

Exercise 8 - Worksheet - 2

D (Cont'd.)

E. ONE RESOURCE TO REMEDY THE SHORTCOMING

F. PROCEDURE FOR EVALUATING THE RESOURCE FOR LOCAL ADOPTION

EXERCISE 8 - ANSWER KEY

Outlining a Plan for Conducting a Resources Search

Explanation: Since you chose your own example, this answer key simple offers you some checkpoints for examining your answers under D. Procedure for Resources Search and F. Procedure for Evaluating the Resource. If you left out key steps in either procedure, it probably will be useful for you to review the contents under Objective 4.

D. PROCEDURE FOR RESOURCES SEARCH

Your answer should deal with the following:

How you will seek expert advice in starting your search. How will you seek such advice from informants in the state education department, in education information centers, in local universities, etc.?

How will you conduct a literature search for resources, using indexes, following up lists of references in articles or books, etc.

How you will arrange telephone interviews or visits with people who have made use of resources in the area you are concerned with.

F. PROCEDURE FOR EVALUATING THE RESOURCE FOR LOCAL ADOPTION

Your answer should deal with the following:

How you will judge the relevance of the resource to local needs by matching specific needs with features of the resource.

How you will judge the effectiveness of the resource using any objective data available and using opinions offered by those who have made use of the resource.

How you will judge the feasibility of adopting the resource in the local situation, taking account of requirements for time, money, and leadership as well as the attitudes of key persons who will be involved.

SUMMARY

Objective 4 has dealt with the task of locating and evaluating resources that could remedy shortcomings of implementing a local educational program. Almost without exception, a variety of approaches have been developed and tried in various locations for meeting any local need. The problem is to locate information about these approaches and to judge its applicability locally.

The content under this objective has covered making use of different sources of information:

Experts either to provide specific information about resources, or guidance in turning to appropriate sources.

Files of the Education Resources Information Center (ERIC) or ERIC Clearinghouses.

Education information centers, or similar resource centers.

Local agencies that have employed any resources related to local needs.

In evaluating resources for local adoption, this objective has considered the use of three criteria:

Relevance of a resource to local needs for improving implementation.

Effectiveness of the resource in meeting needs similar to local needs.

Feasibility of adopting a given resource in the local situation.

Exercise 8 has offered practice in planning a resources search and evaluation, using an example of your own choosing.

Objective 5. Design a plan for improving the implementation of an educational program.

To this point, you have studied four tasks that are basic to improving the implementation of any local educational program. You have examined how to identify and list the key features of a program (Objective 1). Next, you studied how to design a plan for assessing the extent to which the features of a program have been implemented (Objective 2). The third task involved study of how to design a plan for a causal analysis of shortcomings in program implementation (Objective 3). The fourth task dealt with identifying and evaluating resources that could remedy shortcomings of implementation (Objective 4). Now, in Objective 5, you will study how to design a plan for correcting these shortcomings by employing resources that attack their causes.

Note that the focus of Objective 5 is <u>not</u> on designing a change program. Instead, it focuses on efforts to improve the implementation of whatever program already is in operation, whether it is traditional or innovative.

Planning an improvement approach breaks down into three steps: selecting the resources to be included, designing a pattern for using these resources, and designing a way of implementing the pattern. The entry point is the information you obtained under Objective 4 on the relevance, effectiveness, and feasibility of adopting the resources examined. It will be helpful to study the three steps in the planning process with use of an illustration. The illustration we will use involves a program of independent study in algebra and geometry at Freeville High School. (The data presented are simulated.)

Freeville High School is in an integrated suburban district on the fringe of a large city. Its student body is largely from middle-class homes and is 22 per cent black. The school serves 2500 students. A program introduced two years ago allows all students to study introductory algebra and geometry

either in the traditional way or through independent study. Those who request independent study are interviewed by an instructor and, if they appear to have a serious interest in studying on their own, are admitted to this alternative approach. About one-half of Freeville's students, representing all ability levels, elect to study algebra and geometry through independent study.

An evaluation of the independent study approach has revealed serious shortcomings. About one-third of those enrolled in independent study request a transfer to the traditional method within the first month of the semester. Many students who remain in the program do not progress fast enough to complete the course taken during the semester. Many request help from the instructor several times each week instead of finding the scheduled bi-weekly progress check of sufficient help.

A causal analysis of the program's shortcomings has indicated that many students admitted to independent study have little interest in the approach; it initially appealed to them as "the easy way out" rather than a challenge. Thus, the admission procedures are at fault. Also, many students in the program have very limited skills in managing their own learning--budgeting time, planning lessons, carrying out study plans, checking progress, etc. Another reason for students' difficulties is the lack of study materials giving specific guidance in what to study, how to study, and how to check one's work. Finally, it has been found that three of the six teachers conducting the independent study program prefer traditional teaching and are not interested in helping students study on their own.

Investigation of resources that could remedy the situation (including a literature search, interviews with experts on independent study, and visits to programs), revealed the following resources that seemed of potential value:

An admissions procedure at Blake HIgh School that assesses students' capabilities in independent study and, if weaknesses are found, teaches

key skills in lesson planning, time budgeting, and evaluating one's progress. Admission to the program is granted only to those students with demonstrated skills in independent study and a serious commitment to this way of learning.

An in-service teacher education course in the Pickwick Public Schools that teaches methods of planning and conducting independent study in the secondary school.

A set of programmed lessons in introductory algebra designed for use in supplementing instruction.

A detailed study guide for introductory algebra and one for introductory geometry accompanying new text books on these subjects.

Which of these resources should be chosen by Freeville? Exercise 9 asks you to make this judgment, based on the (simulated) evidence given below.

The first test, relevance, you can make without further evidence. Do the resources appear to match the causes of program shortcomings given above?

The second test, effectiveness, calls for your using the following data:

The admissions procedure at Blake, according to informants, is a definite success. Teachers swear by it, and the proportion of dropouts from independent study, or of failures to complete a course within a semester, is below 10 per cent.

The in-service teacher education program at Pickwick was judged by both the instructor and teachers to be helpful in the conduct of the independent study program. The program supervisor indicated that it required $1500 of school funds to conduct.

The programmed materials, according to a department chairman in a school district that tried them, had limited usefulness because they did not match the local curriculum and because some teachers did not believe that students could learn much from such materials.

The use of curricula in algebra and geometry that are equipped with detailed study guides was strongly endorsed by several school districts that employed them in programs emphasizing independent study. (These data came from telephone interviews with officials of those districts.)

The third test, feasibility, calls for your using the following data based on consultation with the Chairman of the Mathematics Department at Freeville High School, teachers of algebra and geometry at that school, and the Associate Superintendent for Instruction of the school district.

Freeville's Associate Superintendent for Instruction, with the support

of the Superintendent, is strongly committed to the program of independent study and has up to $5,000 available to strengthen its implementation. He sees the Blake admissions procedure as a good one but would modify it by teaching skills in independent study to students when they enter the special program.

The Chairman of the Mathematics Department considers in-service education of teachers critical for success of the program. The Associate Superintendent indicates that funds are available for an in-service course on teaching students how to conduct independent study, and on guiding students who are studying independently.

The algebra and geometry teachers are opposed to using programmed instructional materials but are eager to make use of the new text books that are equipped with guides to independent study. The Associate Superintendent indicates that funds are available for purchase of these texts.

On the worksheet for Exercise 9, indicate which of the four resources you would recommend that Freeville adopt for its program to improve the impelementation of the independent study program. Opposite each resource listed on the worksheet, check whether or not you would recommend adoption, then check and briefly justify your judgments regarding relevance, effectiveness, and feasibility.

EXERCISE 9 - WORKSHEET

Resources Recommended for Improving Freeville's Independent Study Program

Directions: Under each resource listed, check whether or not you recommend its adoption, then check and justify your judgments regarding its relevance, effectiveness, and feasibility of adoption at Freeville. Be sure to write in brief reasons for your judgments under relevance, etc.

RESOURCE	RECOMMEND ADOPTION?	BASES FOR RECOMMENDATION
Blake High School's admission procedure	Yes____ No____	Relevant? Yes____ No____ Effective? Yes____ No____ Feasible? Yes____ No____
Pickwick's in-service teacher training	Yes____ No____	Relevant? Yes____ No____ Effective? Yes____ No____ Feasible? Yes____ No____
Programmed materials in algebra	Yes____ No____	Relevant? Yes____ No____ Effective? Yes____ No____ Feasible? Yes____ No____
New texts with study guides	Yes____ No____	Relevant? Yes____ No____ Effective? Yes____ No____ Feasible? Yes____ No____

EXERCISE 9 - ANSWER KEY

Resources Recommended for Improving Freeville's Independent Study Program

Explanation: The suggested answers given below are based on the data given in relation to the four resources. These may be different from your answers, and you may have sound reasons for judgments different from these. The important thing is to think through this choice process carefully, realizing that there may be good reasons for your different judgments.

RESOURCE	RECOMMEND ADOPTION?	BASES FOR RECOMMENDATION
Blake High School's admission procedure	Yes ✓ No	Relevant? Yes ✓ No This procedure definitely meets some of the shortcomings in Freeville's program. Effective? Yes ✓ No The evidence from Blake is that this procedure has been highly effective. Feasible? Yes ✓ No The Freeville Associate Superintendent offers financial support for this.
Pickwick's in-service teacher training	Yes ✓ No	Relevant? Yes ✓ No Freeville teachers of independent study clearly need training. Effective? Yes ✓ No The Freeville Associate Superintendent offers financial support for this. Feasible? Yes ✓ No Funds are available for the in-service course.
Programmed materials in algebra	Yes No ✓	Relevant? Yes ✓ No These materials are designed for independent study. Effective? Yes No ✓ The evidence is that these materials were not effective where tried. Feasible? Yes No ✓ Attitudes of Freeville teachers indicate that these materials should not be adopted.
New texts with study guides	Yes ✓ No	Relevant? Yes ✓ No The study guides make these texts well suited for use with independent study. Effective? Yes ✓ No School districts using these texts have judged them highly effective. Feasible? Yes ✓ No Freeville has funds for purchasing these texts and the teachers favor using them.

Once the resources to be used in improving the implementation of the current program have been chosen the next planning step is that of designing a pattern for making use of them. Continuing the Freeville example, the task is that of working out a specific pattern for using the resources chosen to strengthen the independent study program in algebra and geometry. Suppose the decision was made (a) to adopt the Blake procedure for admission to the independent study program but to modify it by providing needed training in independent study both before and after admission; (b) to adopt the new texts containing study guides; and (c) to provide in-service training for math teachers following the Pickwick model. The design you need to create for the changes to be introduced should be a blueprint of what those changes would look like if placed in full and effective operation. (Note that this is different from creating a plan for implementing the changes.)

The blueprint for the improvement program would need to specify just how the Blake admission procedure would work: what procedures (including tests and interviews) would be used to determine the student's capabilities and interest in independent study; what pre-admission training in independent study would be given; and what further training in independent study would be given after admission to the program. The blueprint also would need to outline the contents and procedures of the in-service training the math teachers would receive in conducting independent study. Finally, the blueprint would need to specify how the new texts with study guides would be used in the independent study program.

In setting up specific plans for the changes to be made, it would be important to involve the teachers who would conduct the changes. This would make their understanding and acceptance of the changes more likely, and would also be the beginning of their training for teaching within the

independent study program.

The final step in planning for the improvement program is that of designing a strategy for introducing the changes in the blueprint. This requires determining when the program will be placed in operation, listing the tasks that must be performed to accomplish implementation of the changes to be made, identifying resources (personnel, money, time, etc.) to be used in preparing to implement the program, and working out a time schedule for performing the required tasks. To give you practice in setting up an implementation plan, Exercise 10 follows.

Exercise 10 calls upon you to set up a time schedule of an implementation plan for introducing the changes in the Freeville independent study program. It assumes that the program is to be in operation when school opens in September. It assumes that, as of March, the blueprint of the changes to be introduced has been completed. The problem is to outline how the period between March and September should be used in getting ready to conduct the revised independent study program. The following facts are given you:

> The Associate Superintendent for Instruction is available to supervise and support the process of preparing to implement the program.
>
> The Chairman of the Math Department can give the time needed for staff in-service training, for developing materials and procedures required by the program changes, and for consulting with the math teachers as needed.
>
> The six math teachers will be available for after-school work sessions during the spring months and for a two-week workshop during July, if paid for their time.
>
> Money is available for the new text series and for paying in-service costs.
>
> Students apply for independent study during March and are evaluated for admission before the end of the month. School is over June 20th.

Your task in Exercise 10 is to fill in the Worksheet with the activities required to get ready for implementing the program in September. What should

be done each month, and who would be involved? After completing the Worksheet, check your answers with the suggestions offered on the Answer Key.

EXERCISE 10 - WORKSHEET

Time Line for Preparing to Implement the Improvement Program

Directions: Under each month listed, indicate the tasks you would recommend for preparing to implement the resources selected to improve the program of independent study in mathematics at Freeville High School. Also, for each task, indicate at the right the staff members you think should be chiefly responsible. (The same task could cover more than one month.)

	TASK	KEY PERSONS
March		
April		
May		
June		
July		
(August-Vacation) September		

EXERCISE 10 - ANSWER KEY

Time Line for Preparing to Implement the Improvement Program

Explanation: The suggested time line below offers one way of preparing to implement the changes selected to improve Freeville's program of independent study. Use it merely to check your outline, and to remind you of any tasks you did not include in your plan.

	TASK	KEY PERSONS
March	Assist teachers in assessing students' readiness to undertake independent study in math.	Math Chairman, Assoc. Sup't.
	Purchase the new texts with study guides.	Assoc. Sup't., Math Chairman
April	Begin training of teachers in conducting independent study, with emphasis on teaching students the needed skills.	Math Chairman
May	Train students in skills of independent study, using methods in Blake approach, as modified for local use.	Math Teachers, Math Chairman
June	Continue training of students. Decide which students are now ready for the program of independent study as shown by their progress in training.	Math Teachers, Math Chairman
July	Hold two-week workshop to train teachers in skills required in conducting the program of independent study.	Math Chairman, Math Teachers
September	Continue training and supervision of teachers in conducting independent study.	Math Chairman
	Continue student training in conduct of independent study.	Math Teachers

SUMMARY

Objective 5 has covered the requirements to be met in designing and implementing a plan to improve the conduct of a local educational program. The planning process has been presented in three steps:

1. Selecting the components to be included in the improvement program
2. Blueprinting the improvement program
3. Planning procedures for implementing the improvement program

This training unit ends at this point. The ideal follow-up would be for you to test your grasp of what the unit has covered by actually providing leadership in strengthening the implementation of a local educational program in the situation where you work or in a school district where you can offer consultant help.

POST-ASSESSMENT EXERCISE - UNIT 9

Planning to Remedy Shortcomings in a Program's Implementation

Directions: This exercise is the same as the Pre-Assessment Exercise which you completed at the beginning of your study of this unit. Review your estimates of mastery of the items on the Pre-Assessment Exercise (page 8); you need do only those items on the Post-Assessment Exercise where you judged your Pre-Assessment answers were not adequate. Check your answers with the Pre- and Post-Assessment Exercise - Answer Key.

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1. From the following description, write down a list of the features of the MIGS program to be implemented in the Franklin Intermediate School.

   Methods of Inquiry in General Science (MIGS) is a new commercial science course for intermediate schools. The two-semester course contains 100 separate project units, each consisting of a study guide, a set of reading booklets, and a list of materials, equipment, etc. to be provided by the school. There are 20 projects each in mechanics, electricity, chemistry, plants, and animals. Each student receives a copy of the Inquiry Methods Handbook as a guide in planning projects and preparing project reports. The science lab is to be divided into 5 learning stations, one for each of the project areas, and a library center housing reading materials. Each learning station is to be equipped with what is required to perform the projects in its area and is to provide work space for 10 students, while the library center is to provide study space for 15 students. (These figures assume a class of 40 students or less.)

   During each semester, each student is required to do one project in each area, two or three independently, and the others with a fellow student. Each student can do as many additional projects as time permits. The student elects each project with the instructor's approval. Not more than one student or student pair can work on a given project at a given time. The instructor assists students individually or in pairs. Students present oral or written reports on all of their projects as the instructor's main basis for evaluating their work. Both instructor and student keep an up-to-date record of projects performed and their level of accomplishment.

   List of program features (Be brief. You may or may not need all the numbers.)

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____
   6. _____
   7. _____
   8. _____
   9. _____
   10. _____
   11. _____
   12. _____
   13. _____

2. How would you obtain data on whether the Franklin I.S. chose to modify its version of MIGS in any way from what has been described?

3. Assume 3 science teachers each has four classes in MIGS. What plan would you use to assess how well the following procedures were employed in the 12 classes? (Assume that you gather your data just after a semester has ended.)

   a. Students elect projects in conference with the instructor.

   b. Each student does projects in each area each semester, two or three individually and the others with another student.

4. List aspects of the classroom setup for MIGS where it is likely that shortcomings of implementation will be found.

5. Assume that Teacher A made extensive use of whole-class lectures and discussions rather than teaching MIGS on an individual basis. What are a number of likely causes of this faulty implementation and how would you get data on them?

6. Assume you found that one major cause of Teacher A's failure to follow the required procedure was a lack of understanding of how to individualize instruction. What are types of sources you would turn to in seeking information or ways of overcoming this failure?

7. Outline a plan for remedying the shortcoming in Teacher A's instruction and state reasons for your choice.

(Continue on back if you need more space.)

PRE- AND POST ASSESSMENT EXERCISE - ANSWER KEY

Explanation: The answers given below, except for the answer to Question 1, are meant to offer you a basis for judging the adequacy of the answers you have given rather than presenting the only correct answers. You could correctly have offered different answers. You should judge your answers in terms of whether they show an understanding of the planning process that compares with that represented by the answers given here.

Q. 1. List of program features

1. Materials for two-semester course available - 100 projects, etc.
2. 5 learning stations provided, each with work space for 10 students
3. A library center with space for 15 students
4. Student does one project in each of 5 areas, 2 or 3 independently, 2 or 3 with a fellow student
5. Students do as many additional projects as their time permits
6. Only one student or pair of students works on a given project at a time
7. The instructor offers assistance to individual students or pairs
8. The instructor evaluates students' work on basis of oral or written reports
9. The instructor keeps a record of each student's performance and level of advancement
10. The student keeps a record of his/her performance and level of work

Q. 2. Obtaining data on whether Franklin I.S. modified the MIGS program

The answer to this question could be obtained by interviewing the person responsible for introducing the MIGS program - perhaps the associate superintendent for instruction, perhaps the department chairman in science.

Q. 3a. Evidence that students elect projects in conference with the instructor

Evidence on this feature could be obtained by interviewing teachers or students, by observing the planning process, or by examining records kept of teacher/student planning. Observation would be the most dependable method.

Q. 3b. Evidence that each student does 5 projects a semester, one in each area, 2 or 3 individually and the others with a fellow student

Here the dependable evidence would come from examining records of projects performed as kept by teachers and students.

Q. 4. List aspects of the classroom setup for MIGS where shortcomings of implementation are apt to occur.

Two aspects of the classroom arrangements need to be checked: whether there are five learning stations, one for each of the five project types, and each capable of handling 10 students; and whether the library center houses the required materials and can accommodate 15 students.

Q. 5. Reasons why Teacher A fails to teach MIGS on an individual basis

Here are some likely reasons for Teacher A's use of whole-class methods:

- A preference for teaching groups rather than individual students
- The lack of training for conducting the individualized approach
- Students' lack of skills in using the project approach

Q. 6. Types of sources of information on improving one's understanding of individualized instruction.

Consult leaders in school systers that employ the MIGS program.
Consult an education information center, if one is available.
Turn to the ERIC file for references describing individualization.
Use the Education Index or other guide to the literature on individualization.
Consult university faculty members on teacher education for individualization.
Consult staff members of the state education department.

Q. 7. Plan for remedying Teacher A's lack of understanding of individualizing instruction.

The plan you offer in answer to this question is your own. For this reason, this answer key can only indicate types of provisions your plan should include.

Your plan should outline the in-service training Teacher A is to receive: what should the training include, how should the training be given, who would conduct it, and when would it occur?

Some what components of training would be work on planning students' projects, tutoring individual students or pairs, teaching students to conduct their projects on their own, and budgeting instructional time.

Some reasonable how aspects of the training would be selected readings about the conduct of individualized project work, observing other teachers conduct individualized instruction, and coaching by someone who know the MIGS program well.

The who probably would need to be the chairman of the science department or a system-level science coordinator.

The when would mainly be during the school day but also could include after-school study and consultation.

Training for Leadership in Local Educational Improvement Programs

UNIT EVALUATION FORM

Unit 9. Analyzing and Improving the Implementation of a Local Educational Program

Evaluation by_____ Date_____

Position_____ Organization_____

Please give your reactions to this unit by checking and writing in your opinions and recommendations. Returning this form to Research for Better Schools, 1700 Market St., Philadelphia, Pa. 19103 (Attention: Glen Heathers) will help us judge the value of the unit as well as aiding in its revision.

A. Your judgment on the importance of a unit on this topic as training for leadership in local educational improvement programs.

Check: Very High____ High____ Moderate____ Low____ Very Low____

Your comments:

B. Your judgment of the quality of the introductory section of the unit.

Check: Very High____ High____ Moderate____ Low____ Very Low____

Your comments:

C. Your judgment of the adequacy of the set of unit objectives.

Check: Very High____ High____ Moderate____ Low____ Very Low____

What objectives do you recommend omitting? Why?

What objectives do you recommend adding? Why?

D. Your judgment on the quality of the unit contents.

Check: Very High____ High____ Moderate____ Low____ Very Low____

Your comments:

E. Your judgment on the quality of the unit exercises.

Check: Very High____ High____ Moderate____ Low____ Very Low____

Your comments:

F. Your judgment on the quality of the unit pre- and post-assessments.

Check: Very High____ High____ Moderate____ Low____ Very Low____

Your comments:

G. About how many hours did you take to complete this unit?_____

H. How valuable do you judge this unit to be for training each of the following categories of educational leaders? Please enter the appropriate symbol.
H - Highly valuable. M - Moderately valuable. L - Low value

____ School system central administrators

____ Building principals

____ Curriculum coordinators

____ Field consultants of state education departments

____ Graduate students in administration or supervision

____ Other: